

***Fiscal Year 2003***

**Annual Performance Evaluation  
and Appraisal**

**Lawrence Berkeley National Laboratory**



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Prepared by:

**U.S. Department of Energy  
Office of Science  
Berkeley Site Office**

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## CONTRACTING OFFICER'S EVALUATION

The Department of Energy, National Nuclear Security Administration (NNSA) Service Center, Oakland Performance Review Board reviewed and discussed the recommendations of functional managers and staff concerning the appropriate adjectival and numeric ratings with which to rate the University of California's performance in the management and operation of the Lawrence Berkeley National Laboratory. Based upon this process and a unanimous vote of the members of this board, an adjectival rating of "**Excellent**" is granted, based on a numeric rating of **87 percent**. This report, entitled the "Fiscal Year 2003 Annual Performance Evaluation and Appraisal - Lawrence Berkeley National Laboratory" provides the basis for my determination, and is hereby endorsed and approved.

Recommendation:

\_\_\_\_\_  
William E. Lambert  
Chairperson, Performance Review Board  
Deputy Assistant Manager for Business Services, NNSA Service Center

Date: \_\_\_\_\_

Approval:

\_\_\_\_\_  
Maria C. Robles  
Contracting Officer, DOE-Berkeley Site Office

Date: \_\_\_\_\_

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## **EXECUTIVE SUMMARY**



## EXECUTIVE SUMMARY

### ***Introduction***

This Annual Performance Evaluation and Appraisal is produced by the U. S. Department of Energy (DOE), Berkeley Site Office (BSO) with assistance from the National Nuclear Security Administration (NNSA), Service Center - Oakland (OAK). It provides the Contracting Officer's written assessment of the Contractor's performance at the Lawrence Berkeley National Laboratory (LBNL or Laboratory) under contract DE-AC03-76SF00098. The contract Appendix F defines the Objective Standards of Performance agreed to by DOE and the University of California (Contractor or UC) to annually measure the Contractor's overall performance of Laboratory Management, Operations and Administration, and Science and Technology/Programmatic performance under the contract.

### ***Performance Period***

This Annual Evaluation and Appraisal is for the period from October 1, 2002, through September 30, 2003 (Fiscal Year 2003).

### ***Appendix F - Objective Standards of Performance***

This document provides the Contracting Officer's Fiscal Year 2003 evaluation and validation of the Contractor's self-assessment of performance in its management and operation of LBNL for DOE under the contract. In this contract, UC and DOE have agreed to use a performance-based management system for Laboratory oversight. The parties agreed to use clear and measurable, objective performance measures as standards against which the Contractor's overall performance in Laboratory Management, Science and Technology, and Operations and Administration under the contract will be assessed and evaluated. DOE and UC also agreed that UC would conduct an ongoing self-assessment process, including self-assessments done by the Laboratory, as the principal means by which the Contractor would evaluate compliance with the performance objectives contained in Appendix F.

DOE BSO and OAK conduct validations of the Contractor's self-assessment and evaluate the Contractor's performance. The validation effort is conducted by teams that are responsible for the various functional areas represented in Appendix F. These teams, with guidance from DOE BSO and OAK management, are responsible for 1) developing an adequate, independent basis for assessing the quality, credibility, and accuracy of the Contractor's self-assessment; and 2) establishing a basis for DOE's evaluation of the Contractor's performance.

This report fulfills the requirements of the contract (Appendix F), and specifically supports and meets the contract requirements of Clauses 2.6 and 5.3:

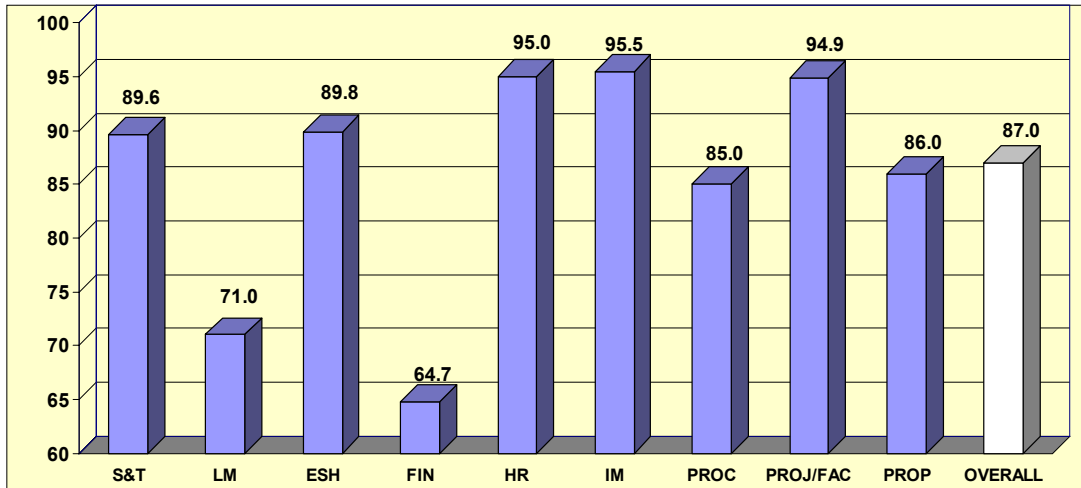
- Provides a summary of the results from the DOE BSO and OAK performance validation and evaluation program;
- Provides a written assessment of the Contractor's performance under the contract based upon the DOE BSO and OAK appraisal program, and the Contracting Officer's evaluation of the Contractor's self-assessment; and
- Provides the basis for determination of the Contractor's earned Program Performance fee.

## ***FY 2003 Appraisal Results in Brief***

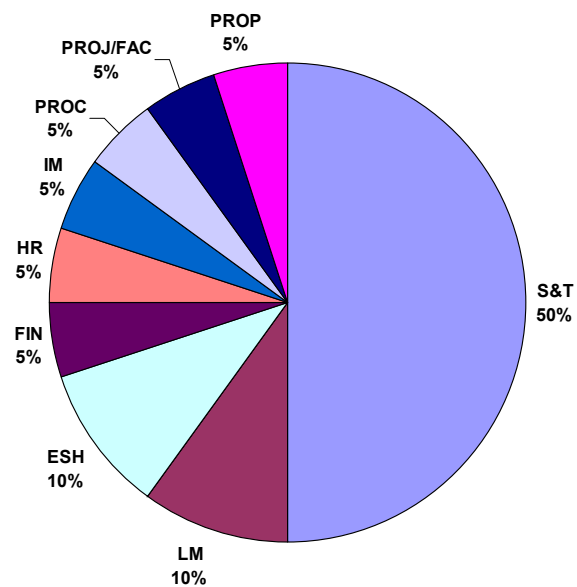
### ***A. Overall Results FY 2003***

DOE rates the overall performance of LBNL as **Excellent** for FY 2003.

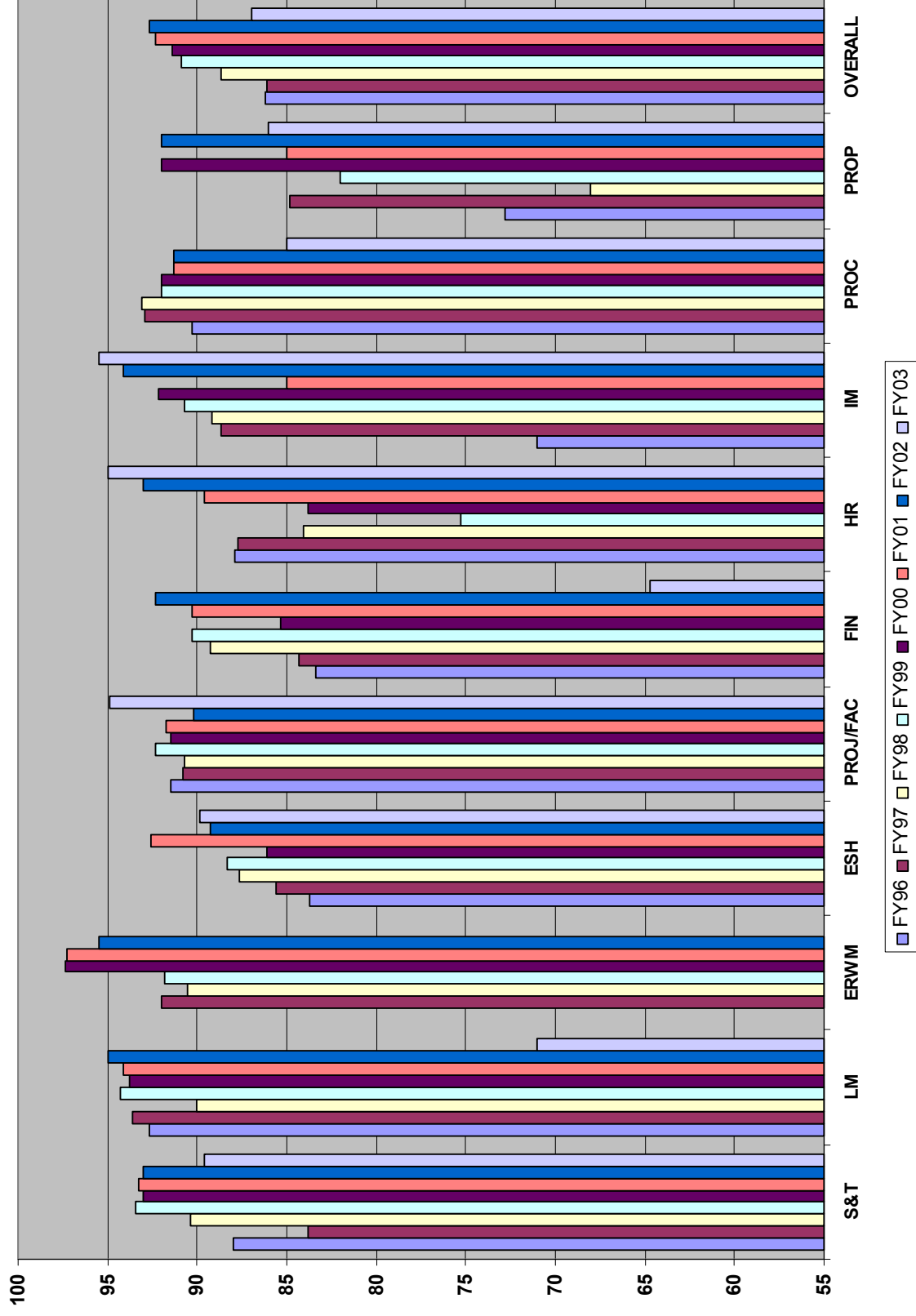
#### **A.1 RATING SUMMARY**



#### **A.2 WEIGHTING SUMMARY**



**B. Overall Trend Results FY 1997 – 2003**



## C. Science and Technology

LBNL developed a strong and compelling 20-Year Vision and interdisciplinary set of Roadmaps that has the potential for revolutionary advancements in science and technology that would sustain its international scientific leadership and broadly benefit the Nation and people of the world. Strategic Science Goals include: discovery of the composition of the Universe through particle astrophysics and the measurement of its most dominant constituent – dark energy; understanding and engineering living systems for DOE missions and human health; developing radical new generations of materials using nanoscience tools; achieving research breakthroughs using soft x-ray and ultrafast science facilities; enabling discovery through advanced scientific computing; advancing heavy-ion driver inertial fusion energy research for electric power generation and high energy density physics; and understanding of global climate change and development of carbon sequestration strategies. The Laboratory continues to excel in its ability to develop and execute path-breaking programs and projects at the frontiers of science.

LBNL's management of the Laboratory-Directed Research and Development (LDRD) program and its pursuit of Work for Others (WFO) activities help to keep the Laboratory on the leading edge of research by directing capabilities and resources toward scientific challenges and emerging opportunities consistent with its mission. The strength of LBNL's bioscience programs continues to be reflected in their strong support from National Institutes of Health for projects complimentary to DOE-funded efforts. Adequate Facilities and Infrastructure, including the deconstruction of the legacy Bevatron facility, remains a critical site issue for all programs at LBNL. Limited budgets in this area are carefully prioritized, and several initiatives for third-party funded buildings are underway. A 10-Year Strategic Facilities Plan is updated annually, and a 20-Year Long-Range Development Plan for the site is underway and will be finalized in FY2004.

The LBNL programmatic assessment is based upon the peer reviews of science and technology (S&T) programs in the Laboratory divisions, LBNL's corresponding self-assessment, independent reviews by DOE-HQ program managers and validations by their BSO counterparts. Overall Laboratory S&T performance is a combined evaluation of the following nine DOE programs, weighted by funding: Office of Science – Basic Energy Sciences (BES), High Energy Physics (HEP), Nuclear Physics (NP), Advanced Scientific Computing Research (ASCR), Fusion Energy Sciences (FES), Biological and Environmental Research (BER); Energy Efficiency and Renewable Energy (EERE); Civilian Radioactive Waste Management (CRWM); and Fossil Energy (FE).

### Basic Energy Sciences

The Basic Energy Sciences programs at LBNL were **outstanding** and rated at 92.0% in FY2003. The research remains innovative, creative, and highly productive. LBNL efforts on the design, construction, and operation and support of the BES-supported major research facilities at LBNL have been very effective, allowing outstanding research to be conducted by investigators at LBNL and by visiting scientists from around the world.

### High Energy Physics

The overall rating for the LBNL High Energy Physics programs is **outstanding** at 90.6% in FY2003. The quality of science at LBNL has been consistently outstanding and highly productive, as annual peer reviews of the program indicate. LBNL's impact and relevance to program mission needs continue to be outstanding. There has been improvement in the programmatic performance and planning. The collaboration on the proposed Supernova Acceleration Probe (SNAP) satellite continues to grow and strengthen, including closer ties with NASA laboratories for a Joint Dark Energy Mission.

## Nuclear Physics

Overall, the rating for the LBNL Nuclear Physics program is **outstanding** at 91.8%. The Laboratory is evaluated as performing at the outstanding or high excellent range in all four of the criteria areas. The LBNL program produces science of outstanding quality that has outstanding relevance to the DOE program mission, being a leading player in major subfields of the nuclear physics including nuclear structure, nuclear physics at high temperature and pressure, neutrino physics, and fundamental symmetries in nuclei. The LBNL program is a world leader in the development of electron cyclotron resonance ion sources and tracking detectors for nuclear spectroscopy. The 88-Inch Cyclotron's capability for "cocktail" beams has lead to a Memorandum of Agreement with the Air Force for increased testing of satellite components.

## Computing Sciences

The overall FY2003 rating for the Computing Sciences program at LBNL is **good** at 78.8% in FY2003. LBNL's applied mathematics research activities continue to be one of the strongest in the nation. The Laboratory has made outstanding contributions to the Mathematical Information and Computational Sciences (MICS) program in all project areas. The National Energy Research Scientific Computing Center (NERSC) remains the premier High Performance Center in the U.S. for unclassified computing. However, the lack of early coordination with the HQ program office on the NERSC-3E decision is a significant management concern. The Energy Sciences Network (ESnet) has lost much of the leadership and innovativeness that characterized it in the past. Significant issues concerning LBNL's management of the ESnet telecommunications subcontract surfaced in late FY2003 resulting in a series of reviews, audits, findings, and changes in laboratory personnel and policies.

## Fusion Energy Sciences

LBNL continues to carry out an **outstanding** research program, rated at 98% for FY2003, within the Virtual National Laboratory (VNL) for Heavy Ion Fusion (HIF). The new results from the High Current Experiment (HCX), the application of the ion source to beam-focusing experiments and the coordination of the experimental and theoretical efforts culminating in the first successful demonstration of the beam focusing using a neutralizing plasma are evidence of the outstanding scientific achievements at LBNL. The experiments on beam focusing by a neutralizing plasma in the Neutralized Transport Experiment (NTX) are providing initial confirmation of the theoretical expectation of beam focusing. The use of computational techniques and beam modeling developed at LLNL (part of the VNL) has been critical in accomplishing these outstanding results.

## Biological and Environmental Research

LBNL's overall performance in the BER programs was evaluated as **outstanding** at 95.2% in FY2003. The research is of high quality, highly productive, highly relevant to the DOE program, and very well managed. LBNL has made major contributions in the use and development of models for studying diverse biological and environmental science topics such as chronic beryllium disease, differentiation, cancer, subsurface transport, and climate change. LBNL contributes to the leadership of the Joint Genome Institute and the Production Genomics Facility, which is now transitioning to a national DNA sequencing resource as well as continuing to support DOE missions. LBNL has made important contributions to biochemistry, biotransformation, biomolecular science and engineering. LBNL's structural biology research continues to be very strong, attracting increasing numbers of users to Advanced Light Source (ALS) structural biology beam lines, attracting research and development funds from National Institutes of Health, and making major advances in the development of new, cutting edge research tools, e.g., new synchrotron-based microscopies and the highly flexible SIBLYS beam line for

studying the structural biology of DNA repair. LBNL has been making significant contributions to the Environmental Management Science Program (EMSP), particularly in the earth sciences. LBNL is also a leader in characterizing actinide-containing compounds using the ALS and other special capabilities.

## Energy Efficiency and Renewable Energy

LBNL's overall performance in the EERE program is rated as **excellent** at 85% in FY2003. LBNL's Battery Program received accolades from external experts and has made significant contributions to advancing battery technologies and ensuring that the U.S. has a stake in future technologies. The Building Technologies Program at LBNL constructed a new windows testing facility, and received a R&D 100 Award for its EnergyPlus Building Simulation Program, which is broadly used by architects and constructors. Progress continues to be realized in advancing organic and gallium nitride light emitting diodes (LEDs), including industrial collaboration, for solid-state lighting. LBNL's Electricity Markets & Policy Group received a prestigious award for excellence in publishing for the National Transmission Grid Study report. The Laboratory also supported the joint U.S.-Canadian Task Force analyzing the causes of northeast blackout in August 2003. LBNL's contributions in the Federal Energy Management Program (FEMP) have included a variety of successful applications of Energy Efficiency Renewable Energy (EERE) technology in the Federal sector, frequently receiving nation-wide attention.

## Civilian Radioactive Waste Management

LBNL's performance for the Yucca Mountain Project is rated a high **excellent** at 88% for FY2003. The Laboratory provided management, technical coordination, and integration support for the activities of the Chief Science Office at Bechtel SAIC Company, LLC (BSC). These activities ensured that LBNL complied with the environmental, safety and health plans, policies, procedures, and practices including Integrated Safety Management (ISM), Voluntary Protection Program (VPP), and the Zero Accident Program (ZAP). LBNL also effectively implemented Quality Assurance program requirements for the BSC-directed science activities in support of YMP, as required by applicable QA plans, policies, procedures, and practices.

LBNL provided scientific support for regulatory and oversight activities. The Laboratory interacted with regulatory agencies to demonstrate regulatory compliance, and to elicit regulatory staff guidance. LBNL developed strategies to address regulatory requirements, and also successfully supported interactions with program oversight organizations such as the Nuclear Waste Technical Review Board (NWTRB), DOE Inspector General (IG), and the General Accounting Office (GAO). LBNL also supported interactions with various program stakeholders, external affairs and outreach activities such as public presentations, tours and interactions with local, state and national media. The Laboratory also supported DOE interactions with elected officials from state, county and community organizations, congressional leaders, and staffs. LBNL further provided scientific expertise to support the CRWM's International Program activities. Although the Laboratory continues to provide programmatic and planning support to the Project and its leadership and management staff continues to support the activities associated with the Project, LBNL management communications could be strengthened.

## Fossil Energy

LBNL's overall performance for the Fossil Energy Program was assessed as **outstanding** at 90% for FY2003. Projects were well managed and the Laboratory's science and technical approach has exceeded requirements, allowing the sponsoring organization to meet or exceed its objectives. LBNL has been outstanding in directing the research efforts under the GEO-SEQ project. LBNL's understanding of the air chemistry affecting the formation of particulate matter has been of great value to the program and to

the overall understanding of particulates. It's development of a portable x-ray computed tomography (CT) scanner is allowing the first ever examination of entire core samples at remote drilling sites and imaging the distribution of methane gas hydrates in them.

#### **D. Laboratory Management**

Lawrence Berkeley National Laboratory's (LBNL) overall Laboratory Management rating for FY 2003 is **good** at 71%. This 20 point / 2 adjectival-level decrement from otherwise *outstanding* performance against the five Laboratory Management measures, is based on shortfalls that surfaced in FY2003 in other areas including Financial, Procurement, and Property Management. Specifically, the deficiencies highlighted a lack of effective internal controls in key areas such as financial management and procurement, inadequate operational awareness of and coordination between financial and business systems, and communications issues with a key program sponsor (Advanced Scientific Computing Research) regarding the NERSC-3 upgrade procurement and the ESnet subcontract. This decrement is consistent with holding senior management accountable for performance problems, and the University of California (UC) and LBNL leadership embraced this outcome.

Strategic planning remained a strength of the Laboratory. Laboratory plans and directions continue to be well-aligned with new Strategic Plans of the Department of Energy (DOE) and the Office of Science (SC). Leadership and planning efforts provided by LBNL continued to play a key role in assisting SC in the updating of its Strategic Plan and 20-year Roadmap. The Laboratory developed a 20-Year Vision for the future of LBNL, and was the first SC laboratory to host an institutional onsite review with the SC Director in a new roundtable format to dialogue on this vision. LBNL continues to be a well-spring of initiatives and innovation to pursue frontier research opportunities across a broad range of SC and DOE programs. The Vision's focus on the growing interdependencies between different programs leverages a key Laboratory strength. Laboratory strategic research mission planning continued to effectively integrate planning for facilities and infrastructure, information technology, and "best practices" business systems.

LBNL remains successful in sustaining a diverse portfolio of non-DOE sponsored research, which comprises nearly one-fourth of the Laboratory's annual operating budget. Efforts have been underway to leverage core competencies in support of the new Department of Homeland Security. The Laboratory has proactive and engaged programs for Community Relations, and science and engineering education outreach, both locally and nationally. LBNL senior management continued its commitment to build diversity awareness and outreach, including workplace enhancements for all employees.

Program Results included: Molecular Foundry funding growth and project readiness for the start of construction project (CD-3), which is on track for ground-breaking in January 2004; commissioning of the ALS Molecular Environmental Sciences beamline, and continued growth in ALS users (up to ~1700) and beamlines (+3); advanced the astrophysics program to define and measure the fundamental properties of the universe, the Supernova Acceleration Probe (SNAP) collaboration continued to grow and the project is included in the President's budget request; the National Energy Research Scientific Computing (NERSC) center doubled its capacity to ~10 teraflops/sec peak performance; through automations, the Joint Genome Institute (JGI)/Production Genomics Facility (PGF) continued to realize rapid growth in the rate of DNA sequencing (>1.5 Gbases/month), the capacity is now applied to a broad range of organisms, and the center is transitioning to lab-operated user facility; inertial fusion energy science was advanced to the final stages of its "proof-of-concept" through the High Current Experiment exploring the limits of beam current in heavy-ion accelerators; construction of a new Windows test facility within the Building energy efficiency program; selection for western regional leadership of a national field study of terrestrial,

geologic and oceanic Carbon sequestration; the transition of work on the Yucca Mountain nuclear waste repository project to providing technical support for NRC licensing; and a set of four mission-stretch goals corresponding to each of the major programs was developed with the BSO and HQ-SC for the next term of the contract.

Operations Results included: Bevatron deconstruction progressed with DOE and Laboratory indirect funding in FY03, and FY04 DOE funding was secured for removal of the adjacent Experimental Beam Hall; working with UC, preparation for construction of a third-party-funding Research Support Building (B.49) was advanced with the selection of a contractor, preconstruction design, environmental assessment, and readiness for ground-breaking in early 2004; as part of the Best Practices initiative, the Laboratory's Human Resources organization moved toward an external certification of its system, and training was instituted for the scientific divisions on DOE Project Management standards and requirements; external audits and reviews of the Laboratories business systems and practices resulted in major changes aimed at tightening controls, reducing risks, and ensuring greater accountability: the procurement card system was revised to significantly reduce the number of authorized cardholders and enhance training; the sensitive property list was extended to a larger number of items, and the capital asset accounting system was improved, and operations and administrative organizations moved toward a uniform "balanced-scorecard" approach to concurrently drive performance, accountability, and employee development and satisfaction; implemented a Site Security Plan, including cyber security, that protects DOE assets and Laboratory employees and infrastructure while preserving an open institution for students, faculty, users, collaborators and visitors; and continued maintenance of a flat indirect cost rate and flat research to support staff ratio in an environment of increasing costs and requirements.

## ***E. Operations and Administration***

### **Environment, Safety and Health**

LBNL's overall ES&H performance was at the high **excellent** level at 89.8 percent for FY2003. The assessment confirmed that LBNL's work is planned and executed safely and significantly below applicable environmental release limits. Performance was measured in three areas: (1) Best Practices and the implementation of National Standards for ES&H programs and systems, (2) Validation of the full implementation and effectiveness of Integrated Safety Management (ISM) at all levels of Laboratory operations, and (3) results from four safety indicators that are ES&H outcome measures. The Best Practices performance measures focus on activities to develop systems based on industry best practices and international/national standards in order to enhance assurance and credibility of LBNL stewardship. The ISM Process and Outcome performance measures address work performance. Greater importance and weighting was placed on worker safety and safe work performance to reflect DOE and SC expectations and priorities.

#### Best Practices and the Implementation of National Standards

LBNL performance for this metric is rated at outstanding. The Laboratory completed 17 out of 17 milestones scheduled for the performance period, which is a noteworthy achievement. The areas identified to implement best practices were in Self-Assessment and Hazards Analysis, and to develop action plans for achieving certification or validation of remainder ES&H Management Systems. The results of the LBNL Self-Assessment and Hazards Analysis Programs independent reviews were very positive. Noteworthy practices were noted in both programs. Some opportunities for improvements were also identified and corrective action plans to address the recommendations are well underway to further strengthen these excellent programs. The BSO participated on the review team and criteria

selections, and increased BSO involvement is expected in the completion of the action plans as LBNL moves closer to full implementation of certified/validated ES&H Management Systems.

#### Implementation and Effectiveness of Integrated Safety Management (ISM)

The implementation and effectiveness of ISM is rated at the high excellent level for the performance period. Work planning, hazard identification/control, and work performance have all been rated at outstanding. The performance for Feedback and Improvement was rated at excellent. All of the LBNL divisional ISM Plans have been reviewed and updated in a timely manner. Hazards are identified and controlled. Almost all work spaces were inspected for deficiencies during the performance period. Several divisions use internal information systems instead of the institutional systems for tracking deficiencies and/or maintaining a current inventory of hazards. More diligence is needed to increase the consistency of maintaining this information at the institutional level.

Overall, work at LBNL is performed in a safe manner in accordance within the safety requirements and formal work authorizations. During the performance period, there were significantly fewer reportable occurrences, of which were operations-related incidents. A review of the reportable incidents for FY2002 and FY2003 found that 13 of the 23 Occurrence Reporting and Processing System (ORPS) for the two-year period identified inadequate procedures or not following procedures as the root cause or direct cause or contributing factor. There were two significant incidents during the performance period related to procedural violations. These incidents were a laser safety occurrence on the University of California at Berkeley (UCB) campus, and the spread of contamination in a controlled area at the Hazardous Waste Handling Facility (HWHF). The laser incident led to a temporary eye injury to a student working on a DOE funded project on the campus. An independent review panel was convened and its report identified opportunities for improvement in the laser safety programs at LBNL and on the UCB campus, as well as, improvements for interactions between LBNL and the campus. LBNL has been responsive and developed a corrective action to address the findings. The second incident was the spread of contamination at the HWHF. This event was similar to an incident that occurred last year. Insufficient management oversight was identified as the root cause in both incidents. The incident resulted in the Radiation Work Authorization being suspended. The ORPS for this incident is still open. Implementation of the corrective action plan is underway, but has not been completed. Some of the corrective actions from the previous incident were found to be ineffective.

The Laboratory has a mature Self-Assessment Program and, overall, it is effective. The independent panel review of the program identified several noteworthy practices and some opportunities for improvement. The performance in this area is rated at the excellent level, since only 82% (9 out of 11) institutional corrective actions were completed. The completion rate for divisional opportunities for improvement action plans is at 85% and the rate of completion of Laboratory Corrective Action Tracking System (LCATS) is at 90.7 %.

#### Outcome Measures

The overall performance is at the high excellent level. LBNL's performance in the area of radiation safety is outstanding for the three performance metrics: radiation dose to the worker, ORPS reportable unplanned exposures, and control of radioactive materials. The accident prevention performance measure is rated at the good level, due in part to an increase in the injury rates in the fourth quarter. The Facilities Division had a dramatic increase in its injury rates in August at a time when the workload increased and the staffing was reduced. It is highly likely that these circumstances contributed to an increase in injury risks. Many innovative LBNL programs are in place aimed at reducing accident/injury and lost workday statistics, but they have not been effective in all divisions. The Laboratory is expected to strengthen its efforts to reduce accident/injury rates to meet the institutional performance targets set by the Office of Science for FY2004 and FY2005.

The emphasis for the Laboratory's ES&H performance is placed on safe work performance as reflected in the ISM Process and Outcome Measures. The overall rating for LBNL's performance in this area is at the high excellent level. The Lab has been very responsive to external and self-assessments that identify opportunities for improvement. The move to certified/validated systems is noteworthy. The Laboratory's response to the two significant ORPS reportable incidents was appropriate. It is expected that the opportunities to improve the accident/injury statistics, the hazard inventory documentation, and the procedure implementation process will further strengthen LBNL's ES&H Program.

## Financial Management

The Laboratory received an overall rating in the Financial Management area of **marginal** at 64.7%. Laboratory performance against the performance measures equated to an overall excellent, but several Financial Management issues warranted a 20 point / 2 adjectival-level decrement from an otherwise rating of excellent. Factors that impacted the rating follow. A failure in management controls contributed to multiple, significant improper disbursements (which were subsequently recovered). A recent external audit revealed material weaknesses in supporting records that is attributed to a failure to perform customary and timely reconciliation of accounts and ledgers. In addition, problems identified in Property Management and Procurement were traceable to deficiencies in the Finance area. Together these deficiencies indicated that the performance of the Financial Management function was considered to be well below the expected standard and were such that management attention and corrective actions were and are required. The Laboratory responded promptly to the situation by bringing in financial management expertise from UCOP and Lawrence Livermore National Laboratory, and by supplementing the accounting staff with temporary personnel to help resolve outstanding work.

## Human Resources

The Laboratory demonstrated **outstanding** performance and received an overall rating of 95.0% under the Human Resources function in FY2003. The first year under a single "system" measure focused on achieving certification of the Human Resources program. The Laboratory developed for Human Resources a five-year (FY2003-FY2007) strategic plan under which certification, or accreditation, will be achieved in the categories of Recruitment, Retention, Development, and Labor and Employee Relations through the process of identifying best practices or national standards, self-assessing against those standards to create a gap analysis, developing transition plans to address gaps, and under-going review to finalize certification at the "Best Practices" level. For FY2003, the Laboratory identified six areas under each of the four categories upon which to focus its efforts, identified standards for each area, and for five areas progressed to the development of transition plans, several of which have seen significant progress in implementation. The Laboratory is to be commended for its accomplishments as well as its commitment to establishing a national process for Human Resources accreditation of other DOE and NNSA laboratories.

## Information Management

LBNL's overall performance in Information Technology Infrastructure (ITI) is rated **outstanding** at 95.5% for FY 2003. The Laboratory's rating is based on their continuous goal of providing quality information technology services in a cost effective and efficient manner. LBNL is providing a protected computing environment by deploying cyber protection measures based on cost and risk. LBNL's Cyber Protection Program (CPP) met the standard for an outstanding performance rating by monitoring damage, vulnerabilities, and awareness which led to an improved deployment of countermeasures and significant progress toward a "validated system" approach to performance.

## Procurement

The Laboratory's overall Procurement rating for FY 2003 is **excellent** at 85%. This is a 10 point / 1 adjectival-level decrement from otherwise outstanding performance against the objective standards in Appendix F. The rating was reduced due to the Procurement Specialist not ensuring that invoices for the ESnet subcontract were received in accordance with contractual requirements.

## Project/Facilities and Construction Management

LBNL's FY 2003 overall performance for Project, Facilities and Construction Management is **outstanding**, with a rating of 94.9%. All five functional areas were rated outstanding: real property management, physical asset planning, construction project management, facility maintenance and utilities and energy management). Compared to FY 2002, this reflects an improvement in construction project management, utilities and energy management.

Real Property Management completed all milestones/tasks for the year, including a) helping DOE-HQ design necessary data fields to reflect a more accurate physical condition of laboratories, b) completion of the Secretarial Waiver for banking the square footage at the Laboratory for Energy-Related Health Research (LEHR) facility to help LBNL off-set the new construction of the Molecular Foundry and User Support Building, c) renovating or demolishing 19,404 sq. ft. of substandard space, and d) coordinating and review of construction plans to gain project approvals of the University of California (UC) Regents for the Molecular Foundry and the third-party financed Building 49.

Physical Asset Planning successfully completed all sixteen milestones/tasks for the year. These included updating the Long Range Development Plan (LRDP), revising the Strategic Facilities Plan, developing siting proposals for the User Support Facility, developing strategies for third-party financed buildings, assuring compliance of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA), planning for possible programmatic growth, and improving communications between Facilities Planning and the LBNL community. Noteworthy accomplishments include acquiring property for the Molecular Foundry and User Support Facility, preparing for the decommissioning and decontaminating (D&D) of the historic Bevalac Facility, environmental planning for the Molecular Foundry and the Building 49 Project, supporting activities for Critical Decision-0 (Mission Need) for the User Support Facility, siting analyses for the LUX Facility, planning for the proposed User Lodging Facility, options for relocating the NERSC Project onto the main LBNL site, and support of D&D activities for the External Particle Beam Hall.

Construction Project Management successfully completed all fifteen milestones/tasks for the year. Milestones were tied to three line-item projects and seven General Plant Projects (GPP's). These included: B70A Wet and Culture Lab Modifications, B77 Phase II Rehabilitation, Radio Communications System Upgrade, B64 Add Lab/Office Space, B58A Expansion, Site-wide Water Distribution Upgrade, B74 Seismic Upgrade, B943 OSF Computer Room Build-out, B6 Southside Expansion and Sector 4 Addition, and User Support Building. Notable achievements include engineering and construction support for the highly technical Nuclear Magnetic Resonance Facility in Building 31, overcoming sub-contractor difficulties to bring the Site-wide Water Distribution Upgrade line item back onto schedule, and completing the Oakland Scientific Facility Computer Room Build-out ahead of schedule and under cost.

All 23 milestones in the Laboratory's Facilities Maintenance plan for FY 2003 were accomplished. Notable achievements included: updating the Five Year Property Inspection Plan, enhancements to the

New Building Cost Report, implementation of a more structured preventive maintenance program for main building damper systems, improvements to the Annual Maintenance Executive Summary Plan, and completion of the final phase of condition assessment inspections. Another notable accomplishment was the completion of enhancements to the MAXIMO software used for the Laboratory's Safety Pilot Project. The software developer has requested that LBNL's enhancements be included in the next MAXIMO software update.

All 20 of the Laboratory's Utility and Energy Management goals for FY 2003 were accomplished. They included reliable electricity service, continued progress toward reducing on-site energy use, staying on track to reach DOE-wide energy reduction goals, completion of energy and water conservation retrofit projects, updating the Laboratory's emergency conservation plan and progress toward analyzing Laboratory buildings for Energy Star Building Labels. Notable achievements were the exceptionally high reliability of Laboratory-wide electrical service, and the application of nationally recognized sustainable design principles to the Molecular Foundry.

## Property

During FY 2003, the Laboratory performed an overall **excellent** level at 86% in the area of property management. The physical property inventory resulted in 99.8 percent of sensitive and equipment items being accounted for. In addition, the Laboratory scored high against other system performance indicators. However, in February 2003, the Laboratory's Personal Property Manager informed DOE that 39 control accounts, with an aggregate value of \$76 M, were included in the personal property database as equipment, but that individual identifiable assets did not exist. The Laboratory's Property Manager was advised to set up a meeting with the Laboratory's Chief Financial Officer to determine what steps were necessary to remove the control accounts from the personal property database. During FY 2002, LBNL could not exclude the 39 control accounts from the asset population for the annual inventory in order to process accurate physical count sheets. Property management recorded the 39 control accounts as accounted for even though they were not touched during the inventory process. The fact that the Laboratory did not rectify the issue with the accounts prior to conducting and reporting the inventory results represents an unacceptable lapse in managerial judgment by representing the inventory results as being both objective and accurate. Therefore, the FY 2003 performance rating was decremented by one adjectival rating / 10 points as a result of these actions and inactions.

### ***Conclusions and Recommendations***

The Laboratory performed at an overall **excellent** level of performance, rated at 87.0% in FY 2003. The Laboratory earned overall ratings of “good” (71%) in Laboratory Management, “excellent” (89.6%) in Science and Technology, and “excellent” (87.6%) in the Operations and Administration areas assessed during the year. Several areas, including Laboratory Management, Financial Management, Procurement, and Property Management, were decremented from ratings they otherwise would have received as a result of a series of cross-cutting issues that surfaced during FY2003. Both UC and LBNL have acknowledged these short-falls and are well underway in instituting corrections.

## **SCIENCE & TECHNOLOGY**

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## Science and Technology / Programmatic Performance

The DOE Office of Science (SC) and other major DOE program sponsors performed appraisals of the Science and Technology performance of the Laboratory for FY2003. LBNL continued to use external peer reviews to provide advice to Laboratory management on the overall quality of the technical work, the effectiveness of Laboratory management in fostering an atmosphere conducive to scientific inquiry, and other aspects affecting the ability of the Laboratory to continue to respond effectively to DOE's missions.

### Institutional Level Assessment

The Institutional-level Assessment for the Lawrence Berkeley National Laboratory (LBNL) highlights strategic laboratory plans and directions, and major program and institutional challenges and issues. LBNL continues to excel in its ability to plan, develop and execute scientific programs. The Laboratory's institutional planning process is aimed at establishing research directions and priorities, and ensuring the future viability of vitality of the institution. The Director's statement in the Laboratory's FY 2004 – FY 2008 Institutional Plan and the Director's 'State of the Laboratory' address provided in June 2003 both highlight significant research progress during the past year, where Laboratory Management's attention has been directed, and outline strategic directions and initiatives for the future. LBNL's strategic science vision is comprised of broad thrust areas built upon its core competencies and directed toward current DOE and national research needs and scientific opportunities:

- Nanoscience – designing new generations of materials with tailored properties
- Astrophysics – measuring the most dominant constituent of the universe – dark energy
- Quantitative Biology – fundamental understanding of the machinery of cells
- Scientific Computation – enabling scientific discovery through advanced computing
- Soft-Xray Science – operate frontier national experimental facilities
- Ultrafast Science – develop new scientific tools to explore this emerging science

The Laboratory has current program activities and proposed new initiatives under each of these areas. LBNL's management of the Laboratory Directed Research and Development (LDRD) and Work for Others (WFO) programs continue to direct the Laboratory's resources toward new scientific opportunities and to keep the Laboratory at the forefront of science and technology within its mission profile. The Laboratory continues to support the LDRD program at about 2.5-3.0 percent of the total funding. WFO continues to comprise about one-fourth of total annual operating funding at LBNL, and remains especially strong in the bioscience research divisions. The National Institute of Health (NIH) provides nearly half of LBNL's WFO sponsorship, or about 10 percent of the Laboratory's total annual budget. An Office of Homeland Security was established to plan and coordinate LBNL research contributions to the new Department of Homeland Security (DHS).

LBNL continued to operate four major user centers open to qualified researchers in the U.S. and from around the world:

- Advanced Light Source (ALS) - ~1600 users
- National Center for Electron Microscopy (NCEM) - ~230 users
- 88" Cyclotron - ~230 users

- National Energy Research Supercomputer Center (NERSC)/Energy Sciences Network (ESnet) - >2000 users

All of these user facilities operated at or near record levels of scientific productivity. The functionality of the ALS continues to expand and the user base has now grown to about 1600. Three new beamlines were added in FY 2003, and the Molecular Environmental Sciences beamline was commissioned. NCEM continues to house the most powerful electron microscopes in the world, and among the few capable of sub-angstrom imaging. The ALS and NCEM are among the Laboratory's unique measurement and characterization facilities that will support the "Molecular Foundry", a nano-fabrication user facility under development and planned for the commencement of operations in FY2007.

The 88" Cyclotron is one of three low-energy nuclear physics facilities operated in the DOE laboratory complex. FY2003 was a transition year for the 88", and was its last year as a national user facility in accordance with FY03 appropriation language. A Memorandum of Agreement with the Air Force was executed that will provide expanded funding and operating time at the 88" Cyclotron for this WFO sponsor. The facility will continue operations in FY2004-05, supporting testing for the Air Force and LBNL's internal nuclear physics program.

During FY2003, the capacity of NERSC was doubled to 10 Tflops peak capacity, making it the largest unclassified, general supercomputing facility in the U.S. supporting over 2000 users. Further upgrades of NERSC and ESnet are included in SC's 20-Year Facilities Roadmap. The Laboratory is well-positioned to contribute to the Department's initiative for an Ultra-scale Scientific Computing Capability aimed at a 100-fold increase in capacity and recapturing U.S. leadership in scientific computing.

Space needs remain a long-standing issue at LBNL, but progress is being realized on several facility initiatives in the Laboratory's Strategic Facilities Plan. The BES Molecular Foundry nanoscience facility is on-track for the start of construction in early FY2004. Arrangements are proceeding for a third-party financed office building (B.49) for ~200 occupants near the Laboratory entrance, with the start of construction scheduled for early 2004. The rapid growth in ALS users has prioritized the need for planning a new User Support Building, which will include the demolition of Building 10 and is progressing toward a construction start in FY2005. LBNL is also exploring a third-party financed dormitory-type facility onsite for ALS and other facility users. New funding for excess facility disposition will enable the removal of the Bevatron's Experimental Beam Hall in FY2004, providing a needed laydown area for construction materials and depositing ~44K gross square feet in DOE's deconstructed "spacebank."

LBNL remains extensively involved in major collaborations at research facilities being constructed and operated across the DOE complex and around the world. The Laboratory continues to implement an Integrated Safeguards and Security Management (ISSM) program and preserve its open environment as a "Tier III" status as a DOE site, i.e., a fully open institution with no classified work or information on-site. This remains critical to all S&T programs given the Laboratory's close ties with UC Berkeley and other universities, and given the large number of research staff and visitors who are foreign nationals.

DOE's science and technology/program assessment of the Laboratory is based upon individual peer reviews of its thirteen scientific divisions, an integrated self-assessment by LBNL, performance reviews by DOE HQ program managers and validation reviews by their DOE BSO counterparts. The DOE assessment of performance for research programs is comprised of a *funding-weighted* evaluation of the following DOE programs: Basic Energy Sciences (BES),

High Energy Physics (HEP), Nuclear Physics (NP), Scientific Computing Research (SCR), Fusion Energy Sciences (FES), Biological and Environmental Research (BER), Energy Efficiency and Renewable Energy (EERE), Civilian Radioactive Waste Management (the Yucca Mountain Project-YMP), and Fossil Energy (FE). The cross-walk between LBNL divisions and their primary DOE program sponsor is generally direct except for two multi-program sponsored divisions: the Accelerator and Fusion Research Division (funded primarily by HEP and FES), and the Earth Sciences Division (funded primarily by BES, BER, YMP, and FE).

The overall FY 2003 rating of these Science and Technology programs is in the high range of **excellent**.

LBNL and DOE evaluated the programs against the following four criteria:

### **Criteria 1: Quality of Science**

Recognized indicators of excellence, including impact of scientific contributions, leadership in the scientific community, innovativeness, and sustained achievement will be assessed as appropriate. As appropriate, other performance measures such as publications, citations, and awards may be considered. This criterion is to be applied to all aspects of technical work, including science, engineering, and technical development.

### **Criteria 2: Relevance to National Needs and Agency Missions**

The impact of Laboratory research and development on the mission needs of the Department of Energy and other agencies funding the programs will be assessed in the reviews. Such considerations include energy policy, economic competitiveness, and national environmental goals, as well as the goals of DOE and other Laboratory funding agencies in advancing fundamental science and strengthening science education. The impact of Laboratory programs on industrial competitiveness and national technology needs will be assessed. The assessment will include characteristics that are not easily measured, including relevance of research programs to national technology needs and effectiveness of outreach efforts to industry. As appropriate, they may also consider such performance measures as licenses and patents, collaborative agreements with industry, and the value of commercial spin-offs.

### **Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities**

Performance measures include success in meeting scientific and technical objectives, technical performance specifications, and user availability goals. Other considerations may include the quality of user science performed, extent of user participation and user satisfaction, operational reliability and efficiency, and effectiveness of planning for future improvements, recognizing that DOE programmatic needs are considered to be primary when balanced against user goals and user satisfaction.

### **Criteria 4: Program Management and Planning**

The assessment should focus on broad programmatic goals, including meeting established technical milestones, carrying out work within budget and on schedule, satisfying the sponsors, providing cost-effective performance, planning for orderly completion or continuation of the programs, and appropriate publication and dissemination of scientific and technical information. In assessing the effectiveness of programmatic and strategic planning, the reviewers may consider the ability to execute projects in concert with overall mission objectives, programmatic responsiveness to changes in scope or technical perspective, and strategic responsiveness to new research missions and emerging national needs. In the evaluation of the effectiveness of program management, consideration include morale, quality of leadership, effectiveness in managing scientific resources (including effectiveness in mobilizing interdisciplinary teams), effectiveness of organization, and efficiency of facility operations.

## Performance Area: Basic Energy Sciences

### FY 2003 Overall Performance Summary:

The Basic Energy Sciences (BES) sponsored research programs at Lawrence Berkeley National Laboratory (LBNL) are innovative, creative, and productive. LBNL efforts on the design, construction, and operation and support of the BES-supported major research facilities at LBNL have been very effective, allowing **outstanding** research to be conducted by investigators at LBNL and visiting scientists from around the world.

<b>Overall Performance Rating: Outstanding</b>
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<b>Criteria 1: Quality of Science: Rating: Outstanding</b>
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Under the Materials and Engineering Physics programs at LBNL during FY 2003, Drs. Ulrich Dahmen, Tamara Radetic, and Frederic Lancon discovered a type of nanoscale “defect” that may be connected to the unusual behavior of metal catalysts and thin films -- critical to the chemical and electronic industries. A grain boundary is where two grains (individual crystallites) touch each other. A distinct linear region, or channel, with a V-shaped cross section has been discovered along the intersection of a grain boundary with an external surface. Atomic-resolution observations of gold surfaces using a state-of-the-art electron microscope, and related atomic scale simulations, showed that this channel has a different crystal structure than the remainder of the material. One implication is that when the grains become sufficiently small, these channel regions may dominate the surface and result in very different reactivity and catalytic activity than expected based on the bulk structure. These channel defects may also pin grain boundaries, slowing or preventing their motion and affecting the processing of thin films for microelectronics. Furthermore, the channels can be thought of as naturally occurring solid nanoscale wires along the surface of a material, whose arrangement could be controlled by appropriate processing.

In the Condensed Matter Physics and Materials Chemistry programs, LBNL investigators continue to collect awards from around the world in recognition of the outstanding science they have done. Most recently, Alex Pines has been named as the Faraday Medalist and Lecturer for 2004 by the Royal Society of Chemistry.

In FY 2003, five research programs in Condensed Matter Physics were mail reviewed with somewhat mixed results: 1) the Quantum Electronics and Condensed Matter Experiments program directed by Dr. Yuen-Ron Shen was viewed as a world class. However, a laser eye accident occurred under this program (see below); 2) the Synthesis and Investigation of Magnetic Nanostructures research program headed by Dr. Zi Qiang Qiu was viewed as a strong. Dr. Qiu was noted for proposing several significant experiments making use of the tools at the ALS; 3) the Resonant Soft X-ray Studies of Nanostructured Magnetic Materials research program directed by Dr. Jeff Kortright had mixed reviews. Dr. Kortright has established unique facilities at the ALS and several successful research collaborations with outstanding scientists; 4) the Electrode Surface Processing research program lead by Dr. Philip Ross has been supported for several years, having begun under the PGNV initiative in FY 1995 for the study of electrocatalysts – multimetallic nanoclusters of varying size, shape, and

composition on well defined substrates. While reviewers indicated significant interest in these investigations, there was a concern about the program's productivity; 5) the Studies of the Metal-Solution Interface research program, also lead by Dr. Ross, is investigating the nature of the structure and bonding at the metal/solution interface using surface x-ray scattering and sum frequency generation with laser light in order to study the interfacial species. This effort received faint praise. It may be time to merge the Studies of the Metal-Solution Interface and the Electrode-Surface Processing projects into a single entity of viable size.

The Fundamental Interactions programs at LBNL includes Photochemistry and Radiation Sciences; Chemical Physics; and Atomic, Molecular, and Optical (AMO) Physics. These programs are generally "world-class" and widely recognized. The programs are quite relevant and working at the cutting edge of their fields. For example, AMO researchers are using the femtosecond slicing source at the Advanced Light Source (ALS) to probe the ultrafast dynamics of atomic ionization. Other LBNL AMO scientists are devising new computational tools for electron-molecule processes that couple recent advances in quantum chemistry with new formalisms in continuum scattering and massively parallel computations. The Chemical Physics program remains extremely strong in areas including gas-phase reaction dynamics, coherent molecular control, state-of-the-art theory in quantum dynamics and electronic structure, and ultrafast surface dynamics. A merit review of the Chemical Physics and Combustion programs was held this year. The Chemical Physics program was judged uniformly excellent, with several principal investigators judged to be leaders in their fields. The reviewers were particularly impressed with the quality and breadth of the programs initiated by Dr. Steve Leone, who joined LBNL last summer. While not formally reviewed this year, the reviewers were very encouraged with the new directions for the Chemical Dynamics Beamline at the ALS, which Dr. Leone now leads. The Combustion program received favorable reviews, but was viewed as consisting of somewhat disconnected elements. The Photochemistry program uses non-linear ultrafast laser spectroscopy to probe the dynamics of electron transfer in photosynthetic systems. An excellent collaboration between the Fleming experimental group and the Head-Gordon theory group has allowed for the interpretation of these experimental results via time-dependent density functional theory applied to large biomolecules.

Programs under Molecular Processes and Geosciences have succeeded in commissioning a new beamline to serve the actinide and environmental molecular sciences communities and provide them with new world class tools. The leadership of Dr. Philip Ross in the electrochemistry activity is anticipated to lead the program into new scientific frontiers that could have broad impact on the future of the Department's initiative in the "hydrogen economy." Studies of reactions within nanovessels are defining new means to control chemical reactivity. The geophysics program supports high quality experimental and computational research on rock physics of porous and fractured rock, subsurface imaging through both seismologic and electromagnetic methods, and hydrologic research on fluid flow through both pores and fractures. Geochemical studies focus on advanced interpretations of low-temperature flow processes, innovations in analytical geochemistry, isotope and trace element chemistry with mass spectrometric and synchrotron-based analyses. In addition, the Earth Sciences Division is expanding a program in biogeochemistry using the ALS among other facilities.

The Energy Biosciences programs at LBNL are doing well. The photosynthesis and photobiology projects have completed their transition towards a scientific focus on photochemistry mechanisms. Research efforts associated with biological materials are maintaining productivity while continuing their redirection to energy related missions. A new nanotechnology project has been initiated on engineering interactive biological-material interfaces and sensors to probe cellular sensing and communication. These programs will be evaluated by on-site reviews in FY 2004.

<b>Criteria 2: Relevance to National Needs and Agency Mission</b> <b>Rating: Outstanding</b>
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The BES materials sciences, chemistry, geosciences, and energy biosciences core research programs at LBNL continue to be very responsive to the energy security, environmental, and other mission needs of the Department. LBNL is a leader in nanoscience.

<b>Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities</b> <b>Rating: Outstanding</b>
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A review last year of the Advanced Light Source (ALS) operations demonstrated that they are in tune with the needs of its users, and that the facility's performance parameters continue to improve. Superb science is being done. The ALS continues to be at the forefront of research in soft x-rays and vacuum UV science. There are significant improvements in the quality of experiments that are performed at the ALS and in the satisfaction of its user's community. There are several beam lines dedicated to chemical physics, AMO physics, and environmental sciences. There is a cadre of outstanding scientists, such as Steve Leone, who manage and use beamlines, e.g., the Chemical Dynamics beamline. The outstanding science performed using the ALS will certainly continue, especially in the area of time-resolved experiments where a beamline is being upgraded to perform experiments in the femtosecond regime.

Progress on The Molecular Foundry, a Nanoscale Science Research Center, has been outstanding -- it is within budget and on schedule. Performance baselines have been established. Project engineering and design work is nearly complete in preparation for construction starting in FY 2004.

The scientific output and user satisfaction from the National Center for Electron Microscopy continue to be outstanding, notwithstanding the long-standing and unresolved difficulties in repairing the foreign-made, high-voltage transformer and power supply that were compounded by the manufacturer's discontinuance of these items. The Center has developed and provided software for high-resolution, electron-optical characterization of defects that permits the reconstruction of electron wave amplitude and phase from an out-of-focus series of images, thus yielding a level of useful information that exceeds that attainable from a single perfectly focused image. The Center continues to make important contributions in atomic level spectroscopy, electron beam holography, electron nano-crystallography, and investigations of nanoscale deformation and of the atomic structure of interfaces.

<b>Criteria 4: Program Management and Planning</b> <b>Rating: Excellent</b>
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LBNL management has provided outstanding leadership in the development of the Transmission Electron Aberration-corrected Electron Microscope in collaboration with the Argonne, Oak Ridge, Brookhaven National Laboratories and the Frederick Seitz Materials Research Laboratory. LBNL has also displayed a vision to extend the limits of electron beam microcharacterization with a new generation of unprecedented capabilities for dynamic in-situ microscopy. These capabilities will

include energy-filtered imaging, holography, and highly localized spectroscopy with high spectral resolution.

Dr. Paul Alivisatos, the new Director of the Materials Sciences Division, has made a number of personnel changes which should significantly enhance the already high level of materials research: the recruitment of Professor Alessandra Lanzara will raise the level of LBNL research using the ALS; Dr. Dung-Hai Lee will strengthen the theory program; Professor Arun Bansil will help with theory in photoemission work; Professor Frances Hellman will assist in investigation of properties of novel solid materials; and Dr. Robert Dynes will assist in investigation of the properties of metals, semiconductors, and superconductors. Also, the Polymer program under Dr. Jean Frechet has been significantly improved. Also, Dr. Alivisatos took swift and appropriate action following the laser eye accident in the laboratory of Dr. Ron Shen.

The overall rating is **Excellent** owing to the laser eye accident noted above. The rating is significantly lowered from that of last year, because this was not the first such accident in the laboratory of this PI. Any future accidents of this type will further diminish the BES evaluation of the Laboratory in this category.

## Performance Area: High Energy Physics

### FY 2003 Overall Performance Summary:

The overall rating is outstanding. The quality of science at LBNL has been consistently outstanding in the past and it continues to be, as reviewed by our annual peer review of the program. The ratings in relevance to mission needs continue to be outstanding. There has been improvement in the programmatic performance and planning, and this has raised the overall numerical grade into the outstanding range.

<b>Overall Performance Rating: Outstanding</b>
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<b>Criteria 1: Quality of Science</b> <b>Rating: Outstanding</b>
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The Office of High Energy Physics (OHEP) conducts an annual peer review of the high energy physics program at LBNL. The results of that review are the dominant contribution to this evaluation. Additional input has been from other DOE peer reviews of individual projects and programs, and the experience of the OHEP program managers.

LBNL is playing leadership roles on a variety of efforts. The most striking of these is dark energy studies. LBNL physicists discovered the expansion of the universe using supernovae. LBNL is deeply involved in R&D for the Supernova Acceleration Probe (SNAP). SNAP has received extensive endorsements by high energy advisory panels and the National Research Council's Connecting Quarks with the Cosmos report.

The next largest effort at LBNL is the ATLAS experiment at the Large Hadron Collider. LBNL is leading the U.S. effort on the construction of the silicon pixel detector, which is the high precision tracking device at the heart of the detector. LBNL physicists are also leaders of the computing and physics analysis efforts.

The superconducting magnet program at LBNL leads the world having broken the record for magnetic field in a superconducting dipole magnet. The laser acceleration effort has also been very well reviewed by peers. The recently started accelerator modeling and acceleration group is promising.

<b>Criteria 2: Relevance to National Needs and Agency Mission</b> <b>Rating: Outstanding</b>
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There have been no major changes in direction in the last year for the LBNL high energy physics program. In fact, the changes that have occurred have resulted in a program more concentrated on the highest priority future efforts of the field. It is a forward looking and focused program.

In addition, LBNL provides strong services to the high-energy physics community. The Particle Data Group based at LBNL collects, organizes, and distributes the most current information on experimental particle physics. This work is now available through the web in addition to the printed version. For over three decades this has provided one of the field's bibles.

LBNL has joined the effort to improve the luminosity performance of the Tevatron. They have made contributions to accelerator modeling, instrumentation, and beam physics.

The strong work with industry on the development of superconducting wire brings benefits to DOE programs outside of high energy physics such as fusion energy sciences.

<b>Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities</b> <b>Rating: N/A</b>
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N/A

<b>Criteria 4: Program Management and Planning</b> <b>Rating: Excellent</b>
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Planning at LBNL has become much more focused over the last couple of years. Difficult choices are being addressed. The lab is making investments in infrastructure such as the Microsystems lab and the I'OASIS lab which benefit the programs. Previous issues with the cryogenic feedboxes for the LHC have been successfully resolved.

## Performance Area: Nuclear Physics

### FY 2003 Overall Performance Summary:

Overall, the rating for LBNL for the Nuclear Physics program is outstanding. In all four of the rated areas, the Laboratory is evaluated at a level in the outstanding or high excellent category. The LBNL program produces science of outstanding quality and has outstanding relevance to the DOE mission in science, being a leading player in major subfields of the nuclear physics including nuclear structure, nuclear physics at high temperature and pressure, neutrino physics, and fundamental symmetries in nuclei. The LBNL program is a world leader in the development of electron cyclotron resonance ion sources and tracking detectors for nuclear spectroscopy, and the 88-Inch Cyclotron capability for “cocktail” beams, leading to outstanding performance in technical development and operation of major facilities.

<b>Overall Performance Rating:</b>
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<b>Criteria 1: Quality of Science</b>
<b>Rating: Outstanding</b>

The low energy nuclear physics research program has produced significant results in the studies of nuclear structure, neutrino physics, and fundamental interactions. The Gammasphere array has been utilized to identify and characterize two highly deformed rotational bands in  $^{108}\text{Cd}$ , the first observation of so-called “hyper-intruder” bands. The Sudbury Neutrino Observatory has completed the second phase of the experiment, the use of salt in the detector medium to enhance sensitivity, and has submitted a paper on the result that significantly refines neutrino oscillation parameters. The KamLAND experiment in Japan that measures neutrino oscillations at a large distance from reactors has published results indicating that anti-electron neutrinos also oscillate, limiting oscillation parameters to the Large Mixing Angle solution. Measurements with laser-trapped radioactive  $^{21}\text{Na}$  have been completed on electron-neutrino correlations that test possible scalar and tensor contributions to electroweak currents.

The relativistic heavy ion group at LBNL continues to play a substantial and outstanding role in the STAR experiment at RHIC at Brookhaven Lab, with members of the group holding leadership positions in several STAR physics analysis-working groups and responsible for writing several of the first publications from RHIC. An exciting new result obtained from the previous two runs as well as from the latest d+Au run is the confirmation of “jet suppression”. This and other discoveries apparently indicate the presence of hot, dense, dissipative matter in central Au+Au collisions. LBNL continues to play a key role by participating in R&D of STAR detector upgrades associated with luminosity upgrades to RHIC and by leading an effort for a possible future involvement on the LHC-ALICE experiment

The nuclear theory group mounts an excellent effort into the studies of the physical properties of nuclei, such as superdeformed and superheavy elements, and nuclear matter under extreme conditions, from the formation of the quark-gluon plasma to properties of neutron stars. With the addition of a divisional fellow, Dr. P. Bedaque, the group has significantly enhanced its efforts in the effective field theory of many-body systems, in particular few nucleon systems and a dilute gas of atoms. Important recent results include jet tomography studies of dense matter relevant to the question of formation of a quark-gluon plasma at RHIC.

<b>Criteria 2: Relevance to National Needs and Agency Mission</b>
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<b>Rating: Outstanding</b>
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The experimental program in nuclear physics supports and provides leadership in areas identified as priorities in the NSAC 2002 Long Range Plan. The LBNL researchers are leaders in the study of nuclei at extreme conditions, especially high angular momentum, deformation, and excitation energy with Gammasphere. They also are leading the U.S. effort in the development of the next generation of gamma-ray detector arrays. The relativistic heavy-ion physics program at RHIC is a high-priority of the national program. The nuclear theory group is playing a significant role in interpreting the data from the new DOE nuclear physics facilities. In addition, a small group of LBNL scientists plays a significant role in the national nuclear data effort that provides evaluated nuclear structure and decay data to the basic research and applied physics communities. The importance of this effort has been recently reaffirmed, as the nuclear data activities are important for counter-terrorism efforts.

<b>Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities</b>
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<b>Rating: Outstanding</b>
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The operation of the 88-Inch Cyclotron continues to provide significant research opportunities in nuclear physics, providing about 4700 hours of beam time with a wide range of stable beams. The ion source group at LBNL is a world leader in the development of electron cyclotron resonance (ECR) ion sources, and is developing a source that is the prototype for RIA. LBNL researchers have developed a concept for a next-generation gamma-ray tracking spectrometer, the GRETINA forward array, and are carrying out successfully the necessary R&D. The 88-Inch Cyclotron routinely provides cocktail beams, which are mixtures of several nuclear beam species that are extensively used for applied purposes. The 88-inch cyclotron provides beams for irradiations of electronic components that are important for the U.S. satellite program.

<b>Criteria 4: Program Management and Planning</b> <b>Rating: Excellent</b>
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The scientific staff has shown substantial insight into the identification of the important questions in nuclear physics, and developed the initiatives to address them. LBNL staff members are providing both formal and informal leadership in a number of areas important to the national program. Dr. James Symons, as past chairman of the DOE/NSF Nuclear Science Advisory Committee (NSAC), was instrumental in developing the 2002 Long Range Plan for the community. The Nuclear Science Division management and 88-Inch Cyclotron leadership are responding proactively and constructively to the planned shutdown of the 88-Inch Cyclotron in FY 2004. LBNL has recognized that timely completion of electronics fabrications has been an issue for some Nuclear Physics Projects and put into place procedures to strengthen their Quality Assurance to alleviate future performance issues.

## Performance Area: Computing Sciences

### FY 2003 Overall Performance Summary:

The Lawrence Berkeley National Laboratory (LBNL) applied mathematics research activities continues to be one of the strongest in the nation.

The work done by LBNL is outstanding and the contribution to the Mathematical Information and Computational Sciences (MICS) program in the respective project areas is very valuable. Energy Sciences Network (ESnet) has lost much of its leadership and innovativeness that has characterized it in the past.

National Energy Research Scientific Computing Center (NERSC) is the premier High Performance Center in the US for unclassified computing and probably in the world. However, the lack of coordination with ASCR on the NERSC-3E decision is a significant problem in the management of the center.

<b>Overall Performance Rating: Good</b>
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<b>Criteria 1: Quality of Science</b>
<b>Rating: Excellent</b>

NERSC: The NERSC center is the premier High Performance Center in the US for unclassified computing and probably in the world.

ESnet: ESnet has been informed more than once this year that they have missed some opportunities to improve DOE Science. Only minimal corrective action seemed to be done. LBNL ESnet personnel should be more aggressive in surveying the market (such as National Lambda Rail and others) and the potential of these vendors offer to improve the Quality of Science in DOE. LBNL personnel have been too conservative in pursuit of opportunities for improvement. The opportunities now have arisen with the high-end telecom vendors to explore new avenues and these need to be explored.

Applied and Computational Mathematics: LBNL's work in benchmarking, performance evaluation and prediction, scalable system software, and programming models and languages is at the forefront of national and international activities in these areas, and LBNL researchers are widely recognized for their contributions. The work done by LBNL is outstanding and the contribution to the MICS program in the respective project areas is very valuable. The LBNL work on the UPC language and programming model has made excellent contributions to improved runtime support libraries, and the work on scalable checkpoint/restart for large scale Linux clusters is very promising.

<b>Criteria 2: Relevance to National Needs and Agency Mission</b>
<b>Rating: Excellent</b>

NERSC: As one of the world's largest unclassified high performance computing facilities (in terms of resources) and with a policy to support research and development pertinent to the DOE

missions the relevance to DOE missions is assured. The NERSC Center also supports the US industrial competitiveness and national technology needs.

ESnet: ESnet continues to be critical for the DOE Science research community and the DOE mission. As new facilities and experiments come online with their huge data flow requirements, a reliable and leading edge infrastructure must be maintained as well as planning for the future must be undertaken. ESnet has done a good job of maintaining the current reliable infrastructure but could be more aggressive in planning for the future.

Applied and Computational Mathematics: Partnering across science and technology programs is an important element to the structure and goals of the MICS program that supports these projects. LBNL fully supports this partnering and provides effective championing of this goal within the broader community.

<b>Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities</b>
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<b>Rating: Good</b>
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NERSC: The NERSC Center has met all expectations of the user community in providing massively parallel processor (MPP) resources as well as the High Performance Storage System (HPSS) capabilities to the scientific community. NERSC conducts annual user surveys and performs self-assessments of the quality of its services and systems.

ESnet: Technical performance of ESnet this past year has been good with only minimal unscheduled downtime. Reliability of the backbone infrastructure was very good. User availability of the network was also very good. Planning for future improvements was sporadic and did not take into account availability of new services from different vendors. Opportunities for improved operations and technical development were therefore missed.

<b>Criteria 4: Program Management and Planning</b>
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<b>Rating: Marginal</b>
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NERSC: NERSC has continued to provide world-class hardware, timely technology upgrades and services virtually unsurpassed by any other computer center in the world. NERSC's cost-effectiveness is high and is expected to remain so. However, the decision to go ahead with the NERSC-3 upgrade without the approval of the Office of Advanced Scientific Computing Research (OASCR) represents a significant management issue. When the responses to the RFP for NERSC-4 did not appear to be cost effective, LBNL's evaluation of the possible alternatives was not effectively communicated to the program office. This resulted in a decision that provided short term benefits to NERSC users but may have compromised the longer term effectiveness of NERSC. In addition, the lack of coordination with ASCR did not allow the decision to be harmonized with ASCR strategies for advancing computing across the Office of Science.

ESnet: The project was not carried out within the funds that were made available to ESnet and LBNL. Additional funds were being requested from DOE when in fact there was a major hidden surplus of funds. The department, contracting, and the DOE program manager were not informed of these major changes in the LBNL budget picture. LBNL management did not

properly oversee the performance of its personnel and their duties. The initial audit indicates that in fact there may have been an active cover-up to keep DOE “in the dark”. Subcontractor invoicing and payment was not properly monitored by LBNL. Subcontracting procedures were not followed. This not only led to an embarrassment at LBNL but also put potential new DOE initiatives at risk for funding.

Applied and Computational Mathematics: LBNL’s effective scientific leadership has resulted in a highly productive teams of researchers funded either entirely or primarily through the ASCR program. LBNL scientists’ collaborative activities within DOE are a positive contribution. LBNL’s scientists also interface well with others in the research community outside of DOE who are pursuing R&D in the same or similar areas. Communication and coordination of research activities at LBNL is noticeably improved through the efforts of the research management chain.

## Performance Area: Fusion Energy Sciences

### FY 2003 Overall Performance Summary:

Lawrence Berkeley National Laboratory (LBNL) continues to carry out an **outstanding** research program within the Virtual National Laboratory (VNL) for Heavy Ion Fusion (HIF). The new results from the High Current Experiment (HCX), the application of the ion source to beam-focusing experiments and the coordination of the experimental and theoretical efforts culminating in the first successful demonstration of the beam focusing using a neutralizing plasma are evidence of the excellent scientific achievements at LBNL. The experiments on the beam focusing by a neutralizing plasma in the Neutralized Transport Experiment (NTX) providing initial confirmation of the theoretical expectation of beam focusing are outstanding. The use of computational techniques and beam modeling developed at LLNL (part of the VNL) has been critical in accomplishing these results.

<b>Overall Performance Rating: Outstanding</b>
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<b>Criteria 1: Quality of Science</b>
<b>Rating: Outstanding</b>

The leadership and coordination of the development of heavy ion beams through the Virtual National Laboratory for Heavy Ion Fusion (VNL for HIF) by LBNL has been very effective, and contributed greatly to the cost effective research efforts across the three laboratories within the VNL (LBNL, PPPL, LLNL). The program quality demonstrated by the numerous conference presentations, invited plenary sessions and journal publications is excellent.

Progress on the HCX at LBNL in FY 2003 has been excellent. This includes the measurement of beam energy, gas desorption and electron emission coefficients, the installation of the four pulsed quadrupole magnets and diagnostics. Likewise, the experiments on the beam focusing by a neutralizing plasma in the Neutralized Transport Experiment (NTX) providing initial confirmation of the theoretical expectation of beam focusing are outstanding. The use of computational techniques and beam modeling developed at LLNL (part of the VNL) has been critical in accomplishing these results, and is an example of the excellent interaction and coordination of theory and experiment in the program

<b>Criteria 2: Relevance to National Needs and Agency Mission</b>
<b>Rating: Outstanding</b>

Within the VNL for HIF for Inertial Fusion Energy (IFE) research, LBNL supports DOE's long term energy goals as well as the commitment of the Office of Science to quality science.

<b>Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities</b>
<b>Rating: N/A</b>

Though no major research facilities are currently being operated by LBNL in the IFE program, LBNL's effort in extending and enhancing the road map for the development of IFE is pertinent in helping the evolution of the program. Though the future funding of the IBX is uncertain, considering IBX as the next step in the HIF program by LBNL serves as a focal point in organizing the current scientific activities in the HIF program. The rapid progress and successes of the experiments in HCX, NTX and STS towards establishing the scientific basis for IBX are evidence of the credibility of this planning process and the ability of LBNL to lead and coordinate the complex experimental and theoretical undertakings. In the last six months, the willingness and the responsiveness of LBNL to the call by the National Academy of Science to initiating a national effort in the area of high energy density physics in terms of planning is praiseworthy.

<b>Criteria 4: Program Management and Planning</b> <b>Rating: Excellent</b>
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Under the VNL for HIF for IFE, the increased communication and coordination between the participating laboratories is a credit to LBNL. This has resulted in much improved field work proposals from all the VNL laboratories. The Program Advisory Committee (PAC) for the HIF program is in general complimentary about the work at LBNL and the VNL. As noted in Goal 03, the effort of VNL, led by LBNL, in evolving a development plan for heavy ion IFE and its responsiveness towards the planning effort in initiating a national, inter-agency program in high energy density physics has been excellent.

## Performance Area: Biological and Environmental Research

### FY 2003 Overall Performance Summary:

Lawrence Berkeley National Laboratory (LBNL) overall performance in this program is **outstanding**. It is highly productive, conducts high quality, highly relevant research, and provides outstanding science program management. LBNL has made major contributions in the use and development of models for studying diverse biological and environmental science topics such as chronic beryllium disease, differentiation, cancer, subsurface transport, and climate change. LBNL contributes to the leadership of the Joint Genome Institute and Production Genomics Facility that successfully completed the sequence of three human chromosomes as part of the Human Genome Project and has had a major impact with its sequencing of a wide array of other organisms from microbes to the Poplar tree. LBNL has made important contributions to biochemistry, biotransformation, biomolecular science and engineering. LBNL structural biology research continues to be very strong, attracting increasing numbers of users to Advanced Light Source (ALS) structural biology beam lines, attracting research and development funds from National Institutes of Health, and making major advances in the development of new, cutting edge research tools, e.g., new synchrotron-based microscopies and the highly flexible SIBLYS beam line for studying the structural biology of DNA repair. LBNL scientists are making significant contributions to the Environmental Management Science Program (EMSP), particularly in the earth sciences. LBNL is also a leader in characterizing actinide-containing compounds using the ALS and other special capabilities.

<b>Overall Performance Rating: Outstanding</b>
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<b>Criteria 1: Quality of Science: Rating: Outstanding</b>
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LBNL's research has made significant contributions to the DOE BER programs. The Laboratory's Life Science research is characterized by outstanding science and scientific management, and by scientific leadership across the range of disciplines represented in the various research programs.

LBNL is making a major contribution to the development of mathematical models for the biological responses of environmental microbes with its Genomes to Life project.

The Medical Sciences Divisions' programs in the areas radiopharmaceutical development, medical imaging instrumentation, accelerator-based neutron beam, and clinical feasibility studies of basic science technologies for potential human use, generally have met the high standards of panel and peer-review, have excellent track-records of productivity and scientific publications, and are well-regarded nationally and internationally.

LBNL's researchers in the Natural and Accelerated Bioremediation Research (NABIR) program have made important contributions to the biogeochemistry, biotransformation, biomolecular science and engineering elements of the program.

<b>Criteria 2: Relevance to National Needs and Agency Mission Rating: Outstanding</b>
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LBNL's life sciences research is highly relevant to DOE missions and national scientific needs. It is expected to lead to new strategies and technologies for the BER program.

LBNL's low dose radiation research provides fundamental discovery and knowledge needed by policy makers to develop future, science-based radiation protection standards for workers and the public.

LBNL's research is addressing high priority research on oceanic and terrestrial carbon cycling and sequestration.

<b>Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities</b> <b>Rating: Outstanding</b>
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LBNL contributes to the leadership of the Joint Genome Institute and Production Genomics Facility that successfully completed the sequence of three human chromosomes as part of the Human Genome Project and has had a major impact with its sequencing of a wide array of other organisms from microbes to the Poplar tree. LBNL structural biology research continues to be very strong, attracting increasing numbers of users to Advanced Light Source (ALS) structural biology beam lines, and making major advances in the development of new, cutting edge research tools, e.g., new synchrotron-based microscopies and the highly flexible SIBLYS beam line for studying the structural biology of DNA repair.

<b>Criteria 4: Program Management and Planning</b> <b>Rating: Outstanding</b>
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LBNL has done an outstanding job of ensuring that its life sciences research programs have been highly productive, producing timely and high quality research results, and facilities and instrumentation that are widely sought after and needed. The Laboratory has done an outstanding job of ensuring that its research managers and research management infrastructure supports outstanding science and productivity. LBNL should be praised for their interest in and commitment to strong science management.

The Medical Sciences Divisions' programs at the Center for Functional Imaging are well managed. The investigators have forged successful intramural and extramural collaborations for effective management and productivity of research programs, and optimum use of resources and facilities.

Laboratory management continues to be responsive to DOE programmatic needs in a timely fashion. The DOE BER staff continues to be informed by the laboratory principal investigators on major research highlights, scientific achievements, and program opportunities.

## Performance Area: Energy Efficiency & Renewable Energy

### FY 2003 Overall Performance Summary:

<b>Overall Performance Rating: Excellent</b>
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<b>Criteria 1: Quality of Science</b>
<b>Rating: Excellent</b>

The Building Technologies Program is a research leader whose work quality is consistently high. The work focuses more on applied research rather than basic science, but the lighting research program is leveraging the basic research capacity of the Laboratory for development of organic- and gallium nitride light emitting diodes (LEDs) for next generation lighting. A new windows testing facility was built and received a R&D 100 Award for its EnergyPlus Building Simulation Program, which is broadly used by architects and constructors. LBNL's research has made a variety of important contributions to the engineering and construction industries' knowledge base in the areas of lighting and best building design practices.

LBNL's Battery Program has received accolades from external experts and has made significant contributions to advancing battery technologies and ensuring that the U.S. has a stake in future technologies. LBNL's Electricity Markets & Policy Group received a prestigious award for excellence in publishing for the *National Transmission Grid Study* report. LBNL's contributions in the Federal Energy Management Program (FEMP) have included a variety of successful applications of EERE technology in the Federal sector, frequently receiving Nation-wide attention.

<b>Criteria 2: Relevance to National Needs and Agency Mission</b>
<b>Rating: Excellent</b>

LBNL's research for the Freedom CAR program focuses on the underlying mechanisms that presently prevent advanced battery and hydrogen fuel cell systems from being technically and commercially viable. All investigators in Freedom CAR program are performing research relevant to at least one of the baseline systems.

In the Distributed Energy and Electric Reliability (DEER) program, LBNL has provided outstanding support of DOE's program priorities. The Laboratory is leading the Consortium for Electric Reliability Technology Solutions (CERTS) that is has a key role in implementing recommendations of the Department's National Transmission Grid Study. It has performed outstanding work related to published reports, program reviews and management of subcontracts. The Laboratory also provided expert support to the joint U.S.-Canadian Secretarial Task Force that analyzed the causes of northeast blackout in August 2003.

The international scope of its work, with particular emphasis on energy efficiency in China, is laudable and unique among DOE laboratories. The indoor air quality group's work on protecting occupants and assisting first responders for chemical and biological releases in/near buildings has grown increasing pertinent for homeland security.

<b>Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities</b> <b>Rating: N/A</b>
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<b>Criteria 4: Program Management and Planning</b> <b>Rating: Excellent</b>
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LBNL's programmatic and strategic planning show innovation, vision, and leadership. It continues to attract a very high quality and diverse staff. The diversification of its research sponsorship and budget growth across all departments over the past several years is a tribute to its entrepreneurialship. Its emerging work in water-use efficiency, and its relation to energy-efficiency, is a good example and a tribute to the forward-looking nature of its work.

Key opportunities for the Environmental Energy Technologies Division (EETD) include: strengthening its relationship with the EERE program offices, expanding industrial collaborations and interactions, and working with Laboratory Operations, both to improve laboratory space and potentially increase synergies by consolidating and reducing the number of facilities across which the division's work is spread.

## Performance Area: Civilian Radioactive Waste Management

### FY 2003 Overall Performance Summary:

The Lawrence Berkeley National Laboratory (LBNL) has provided management, technical coordination, and integration support for the activities of the Chief Science Office (CSO) at Bechtel SAIC Company, LLC (BSC). These activities ensured that LBNL complied with the environmental, safety and health plans, policies, procedures, and practices including Integrated Safety Management (ISM), Voluntary Protection Program (VPP), and the Zero Accident Program (ZAP). LBNL also effectively implemented Quality Assurance (QA) program requirements for the BSC-directed science activities in support of YMP, as required by applicable QA plans, policies, procedures, and practices.

LBNL provided scientific support for regulatory and oversight activities. LBNL interacted with regulatory agencies to demonstrate regulatory compliance, and to elicit regulatory staff guidance. LBNL developed strategies to address regulatory requirements. LBNL also successfully supported interactions with program oversight organizations such as the Nuclear Waste Technical Review Board (NWTRB), DOE Inspector General (IG), and the General Accounting Office (GAO).

LBNL supported interactions with various program stakeholders. LBNL supported external affairs and outreach activities such as public presentations, tours and interactions with local, state and national media. LBNL also supported DOE interactions with elected officials from state, county and community organizations, congressional leaders, and staffs. LBNL further provided scientific expertise to support the DOE CRWMS International Program activities.

Although LBNL continues to provide programmatic and planning support to the Project and their leadership and management staff continue to support the activities associated with the Project, the issue identified in Performance Goal 4 has impacted the overall rating downwards because of insufficient LBNL management communication.

<b>Overall Performance Rating: Excellent</b>
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<b>Criteria 1: Quality of Science</b>
<b>Rating: Outstanding</b>

The support in the science components provided by LBNL has been **outstanding**. LBNL has been consistently reliable in their support to the Office of Repository Development (ORD), and the combination of the uniqueness, high quality, and magnitude of the work products has continued to be noteworthy. LBNL scientists have consistently provided high quality technical products and have been instrumental in resolving technical issues. LBNL scientists were particularly instrumental in completing Analysis/Model Reports (AMRs) in support of the successful Yucca Mountain Site Recommendation/Designation process. They have also provided excellent support in the areas of Quality Assurance implementation, field thermal testing support, and Unsaturated Zone flow and transport modeling, and Exploratory Studies Facility/Enhanced Characterization of the Repository Block seepage and transport testing investigations. In the field testing area, LBNL scientists are well integrated with the Test Coordination Office; their equipment is well constructed and appropriate to

the work; they have participated in several meetings on the sealed bulkhead test in the cross drift, offering insights and recommendations on the test, etc. They are always well prepared and discuss the field testing activities knowledgeably, thereby contributing to the Project's success. LBNL has also been a willing participant, often providing leadership, supporting many areas outside of the primary product development. These areas included participation on numerous international waste management scientific collaborations (i.e., dealing with technology for the simulation of coupled processes, testing in underground research facilities, etc.), publication of scientific work in various forums and periodicals, and an effective relationship with academia. Another area in which LBNL has provided outstanding support is in the area of assisting DOE with the integration of the scientific work being performed by personnel at the Desert Research Institute and the Atomic Energy of Canada Limited. In addition, the areas of in-situ testing, modeling, and support for interactions with the Nuclear Regulatory Commission and the Nuclear Waste Technical Review Board has continued to contribute to the outside understanding of the project's science

<b>Criteria 2: Relevance to National Needs and Agency Mission</b> <b>Rating: Outstanding</b>
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Activities that characterize and provide the technical bases for unsaturated zone flow and transport are critical to understanding the performance of a potential repository at Yucca Mountain, and LBNL has significant involvement in these efforts. Their efforts have a direct impact on the environmental goal of geologic disposal, which also has nonproliferation related aspects.

<b>Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities</b> <b>Rating: N/A</b>
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<b>Criteria 4: Program Management and Planning</b> <b>Rating: Excellent</b>
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LBNL scientists and senior management have continued to contribute quality work that meets the needs of the project. LBNL management has taken steps to ensure that Laboratory personnel assigned to the Project were qualified and that they met the applicable Program requirements for education, experience and training. LBNL has also integrated scientific and technical work performance at other National Laboratories involved with YMP, BSC, USGS and DOE, and was also involved in BSC-DOE Steering Committee meetings and Chief Science Office (CSO) staff meetings. Also worthy of mentioning is the July 2003 Performance Assessment Management review, in which the LBNL products were evaluated to determine if they sufficiently met the needs of their users, the TSPA organization. In this internal BSC review, the LBNL products were determined to meet 95-100% of the review criteria. LBNL scientists and senior management continue to remain focused on task assignments despite an often tight production schedule and a heavy, sometimes evolving, work load. LBNL personnel are responsive, highly motivated, and conscientious. These attributes are directly responsible for the positive programmatic contribution to the program.

One issue of concern that has been noted by BSC is insufficient LBNL management communication. Although LBNL continues to provide programmatic and planning support to the Project and their leadership and management staff continue to support the activities associated with the Project, management of YMP activities at LBNL is not transparent. BSC resources could not be effectively utilized in addressing difficulties encountered with LBNL work because of insufficient LBNL management communication. Increased access to LBNL technical staff and more frequent and effective communication between LBNL and BSC management will improve overall performance. The LBNL-YMP laboratory lead has been informed of this issue and is evaluating the appropriate course of action.

## Performance Area: Fossil Energy

### FY 2003 Overall Performance Summary:

Projects are been well managed and Lawrence Berkeley National Laboratory's (LBNL) science and technical approach has exceeded requirements and allowed the sponsoring organization to meet or exceed its objectives. LBNL has been outstanding in directing the research efforts under the GEO-SEQ project. LBNL's understanding of the air chemistry affecting the formation of particulate matter has been of great value to the program and to the overall understanding of particulates.

<b>Overall Performance Rating: Outstanding</b>
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<b>Criteria 1: Quality of Science</b>
<b>Rating: Outstanding</b>

LBNL delivers high quality science as evidenced by its publications in refereed journals. The Laboratory's performance has been **outstanding** in conducting and directing research efforts.

<b>Criteria 2: Relevance to National Needs and Agency Mission</b>
<b>Rating: Excellent</b>

LBNL collaborates with industry, and conducts research that is essential and non-overlapping with other efforts toward meeting the mission needs of DOE and other federal agencies.

<b>Criteria 3: Performance in the Technical Development and Operation of Major Research Facilities</b>
<b>Rating: N/A</b>

<b>Criteria 4: Program Management and Planning</b>
<b>Rating: Outstanding</b>

The LBNL Principal Investigators (PIs) are very good at meeting established technical milestones. Projects are well designed and managed so that they are both on time and within budget. There is a high level of technical leadership exhibited by LBNL managers that has enabled the effective management of the available resources of personnel, scientific / research instrumentation, and overall cooperation in the progress and efficiency of accomplishing the tasks at hand. DOE HQ did express a need to be better informed of conference presentations or publications before they occur.

# **LABORATORY MANAGEMENT**

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**Performance Area:        LABORATORY MANAGEMENT****Performance Objective:    #1.0    Laboratory Leadership**

Laboratory leadership, in support of DOE and Laboratory missions, ensures the stewardship and viability of the institution. **(Weight = 100%)**

Note: The Gradient for each measure is shown in the attachment and the weighting between Approach/Deployment and Results is A/D=40 percent and R=60 percent.

**Criterion:                        #1.1    Institutional Stewardship and Viability**

Evaluation of Laboratory senior management's approach, deployment and results for ensuring that the institution is capable of executing its current and future missions. **(Weight = 100%)**

**Performance Measures:    #1.1.a Strategic Planning**

Evaluation of management's approach for strategic planning that aligns Laboratory vision, goals, programs, resources, facilities and performance expectations with DOE's mission, strategic plans and objectives. The assessment will focus on achievement of the key objectives contained in the Laboratory's plans and how this information is communicated with DOE. **(Weight = 20.0%)**

**Gradients:**    The performance expectation for each performance measure will use the scoring criteria indicated in Table 1. Each performance measure indicates the relative weights between the Approach/Deployment criteria and the Results criteria.

## Performance Narrative:

### Approach/Deployment

LBNL leadership continued to communicate and work closely with DOE to align the Laboratory's scientific and operational activities with DOE scientific and management priorities, especially those of the Office of Science (SC). During FY2003, special efforts were made to identify and address improvements in business management practices and accountability. The Laboratory also contributed significantly to the development of an updated SC Strategic Plan.

Laboratory-wide planning systems are used to guide and manage the institution, and to support DOE oversight and management by the University of California (UC). These include Institutional Planning (and the associated annual SC onsite review); Strategic Facilities Planning; Facilities and Capital Asset Planning; Environment, Safety, Health and Infrastructure Planning; Integrated Safeguards and Security Planning (including Cybersecurity); Communications Planning; Community Relations Planning; Diversity Planning; Indirect Cost Planning (including maintenance and LDRD budgets), and others. These plans are coordinated within the Laboratory through the use of a Comprehensive Planning Calendar.

Planning documents that are communicated to and reviewed by the DOE-SC Berkeley Site Office (BSO) and in DOE-HQ include the annual Institutional Plan, Laboratory-Directed Research and Development (LDRD) Plan, Strategic Facility Plans, Project Plans, ES&H and Infrastructure Plan, field budget/work proposals, and others. Laboratory management also meets regularly with DOE officials through a variety of communications forums. Laboratory managers and senior scientific staff participate on several DOE-SC advisory committees and panels that define the requirements and directions of national research frontiers.

In May 2003, LBNL's leadership hosted the first SC institutional onsite review in a new roundtable format for candid discussions on the 20-year vision and roadmap for the future of the Laboratory. The LBNL Director highlighted the evolution from a multi-program institution of largely independent efforts to one of ever-growing *interdependence* between programs to create unique synergies and leverage the Laboratory's program diversity. LBNL developed an impressive new 20-Year Vision with phased strategic goals for each of its major research and operations thrust areas. These goals were reviewed and refined with senior DOE program officials in the roundtable meeting and other venues. The near-term elements of this vision are included in LBNL's FY2004-08 Institutional Plan, which is intended to be referenced in the next "best practices" version of the LBNL contract. The Laboratory's vision and strategic plans are fully aligned with SC's, and achievement of its strategic goals would have major scientific and societal impacts. Building on LBNL core competencies, these interconnected goals include:

- (1) Discovery of the composition of the universe through particle astrophysics and the measurement of dark energy
- (2) Understand and engineer living systems for DOE Missions
- (3) Design radically new generations of materials with tailored properties
- (4) Achieve breakthroughs using soft x-ray and ultrafast science tools
- (5) Enable novel discoveries through advanced scientific computing
- (6) Advance heavy-ion driver inertial fusion energy research for high energy density physics and electric power generation
- (7) Understand global climate change and develop carbon sequestration strategies.

Laboratory planning also included key operations and business areas that enable and support the scientific missions. The Vision and Roadmaps also included goals for Site Infrastructure and Safety for Science, and Best Practices Contracting and Accountability. Infrastructure and Strategic Facilities Planning remained important priorities given the continued aging of facilities and growth in the mission and scientific opportunities at the Laboratory. Cybersecurity remains a priority, and an area where LBNL has been effective and recognized as a leader.

Consistent with the President's Management Agenda and in support of the Government Performance and Results Act, LBNL leadership strengthened practices to hold managers and staff more accountable for results. Internal communications that place high value on integrity, creativity, best business practices, and attention to safe and secure operations. Controls in procurement and property management were strengthened. The Laboratory continued investment in information technology systems that automate processes, bolster employee productivity, enable more rapid responses to data calls, and better inform management decision-making.

LBNL continued broad, strong support to a range of DOE missions through the DOE laboratory system by contributing expertise and collaborating in major DOE projects and at other DOE labs and around the world. This includes the design, development, installation and commissioning of detectors and other components during construction, as well as performing the scientific research during the operations phase. Current major offsite projects/collaborations include:

- Spallation Neutron Source (SNS) at ORNL (accelerator front-end)
- Asymmetric B-Meson Factory at SLAC (BaBar detector, low energy ring)
- Relativistic Heavy-Ion Collider (RHIC) facility at BNL (STAR detector)
- CDF and D0 detectors at the Tevatron at Fermilab
- Supernova Observations at telescopes world-wide and with the Hubble
- ATLAS detector for the Large Hardron Collider (LHC) at CERN (Switzerland)
- Sudbury (solar) Neutrino Observatory (SNO) (Ontario)
- KamLAND (reactor) Neutrino Facility (Japan)
- Antarctic Muon and Neutrino Detector Array (AMANDA) & ICE Cube at the South Pole
- Dual-Axis Radiographic Hydrodynamic Test (DARHT) at LANL
- Yucca Mtn Project (YMP) for reactor waste at Nevada Test Site
- DNA sequencing at the DOE Joint Genomics Institute (JGI)/Production Genomics Facility (PGF) – a collaboration with LLNL and LANL.

## Results

LBNL continued to broadly advance DOE's missions, especially those of the Office of Science, as well as the missions of other major sponsors, through the pursuit of strategic goals. LBNL's planning and leadership efforts resulted in a number of scientific and operational successes that contributed to achieving DOE objectives in FY2003. Some FY2003 program results are highlighted below:

- In support of the National Nanoscience and Technology Initiative, LBNL continued advancement of Molecular Foundry project through Critical Decision 2 (Performance Baseline approved), and through the engineering design phase toward readiness for construction (Critical Decision 3) in early FY2004. Initial construction funding is included in the FY2004 budget.
- The Laboratory continued to expand the user base and scientific productivity of the Advanced Light Source (ALS) with growth to ~1700 users, construction of three new

beamlines, and the commissioning of Molecular Environmental Sciences and superbend beamlines (extending operations into the intermediate-hard x-ray regime). The Transmission Electron Aberration-Corrected Microscope (TEAM), a multi-laboratory project led by LBNL, also received funding support in the FY2004 budget.

- LBNL advanced a concept for “4<sup>th</sup> generation” light source to explore the nascent field of ultrafast (femtosecond) science. The Linac-based Ultrafast X-ray Source (LUX) would have a broad operating range to *dynamically* characterize and measure fundamental physical phenomena, e.g., chemical reactions, on temporal scales not currently accessible.
- The proposed Supernova/Acceleration Probe (SNAP) satellite to measure the “dark energy” estimated to comprise 73% of the universe received growing mission and funding support. The international collaboration on the project continued to grow and the connections with NASA expanded.
- The 88” Cyclotron will discontinue as a user facility but will continue operations for the LBNL low-energy Nuclear Physics program and for the Air Force, pursuant to a DOE-LBNL-Air Force Memorandum of Agreement that was developed. The ~\$18M Gretina project received approval of Critical Decision 0 (Mission Need). Notable results in neutrino science confirming solar neutrino oscillation made international headlines based largely on the Laboratory’s work at the Sudbury Neutrino Observatory and the KamLAND experiment.
- The capacity of the National Energy Research Scientific Computing (NERSC) Center in the Oakland Scientific Facility were doubled to a peak capacity of 10 teraflops/sec making it the largest general purpose unclassified supercomputing facility in the United States.
- The Laboratory’s Genomes to Life (GTL) research is advancing an integrated understanding of environmental microbiology based on functional genomics measurements and computational analysis and modeling. Its GTL proposal for high-throughput protein-complex characterization also received funding support. The Joint Genome Institute (JGI) is transitioning to Laboratory-operated national resource to provide its growing DNA sequencing capability to the Nation.
- New measurements and analyses of oceanic and terrestrial Carbon cycling through the deployment of autonomous ocean probes in the north and south Pacific, and implementation of a suite of sensors in the southern great plains as part of the DOE Atmospheric Radiation Measurement program; and designation of LBNL to lead the Western Regional Carbon Sequestration Partnership as part of DOE’s national effort to investigate carbon sequestration approaches.
- Installation of a new Windows testing facility for the Building Technologies program within the Energy Efficiency and Renewable Energy (EERE) program.

## FY2003 Operational highlights included:

- In follow-up to the Best Practices Pilot Study, operations and administrative functional areas (especially Human Resources and Safety) continued to move towards external reviews, system-level certifications, and the development of a “balanced scorecard” approach to focus improvement efforts with greater uniformity in support of mission objectives.
- Continued progress in the deconstruction and waste disposal work on the Bevatron, and the securing of new DOE funding in FY04 for removal of the adjacent Experimental Beam Hall.
- In coordination with UC and DOE, prepared for the construction of a third-party-funded Research Support Building (B.49) on the main site, with the selection of a contractor, preconstruction architecture and design, environmental assessment, and readiness for construction groundbreaking in early 2004.
- Undertook several audits and reviews of Laboratory business systems and instituted changes to tighten up business practices, strengthen controls and reduce risks. These included: asset control, procurement card, cost-allowability, benefits eligibility, and WFO funding. The Procurement Card system for low-value purchases was substantially revised and the number of authorized purchasers significantly reduced. The sensitive property listing was expanded and the capital asset accounting system was improved. New procurement and property management systems and procedures were instituted.
- A Research Administration Proposal/Project Information Database (RAPID) was implemented to better support and manage the Laboratory’s diverse portfolio of non-DOE sponsored research (Work For Others – WFO). RAPID is integrated with the Laboratory’s financial and human resource information systems, and is saving ~\$11K/month in avoided costs associated with the legacy system.
- Implemented a Site Security Plan, including internal notifications of elevated threat levels, that protects Laboratory employees and infrastructure and DOE assets while preserving an open institution for students, faculty, users, collaborators and visitors essential to the productivity of its scientific mission.
- Controlled indirect costs in an environment of increasing costs and requirements to maintain an overall flat indirect cost rate and a steady ratio of 2.2 in number of science and technology to operations and administrative staff.

<b>Performance Rating (Adjectival): Outstanding</b>
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<b>95.00%</b>
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<b>Performance Measure: #1.1.b Effective Resource Management and Stewardship of Assets</b>
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<p>Evaluation of management's effectiveness to plan, prioritize, and manage costs, infrastructure and staff resources consistent with DOE and Laboratory goals. Assessment will focus on performance results; which may include indicators of cost effectiveness, such as the ratio of S&amp;T to A&amp;O staff, representative operations support activities, and other productivity or re-engineering indicators.</p>
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<p align="right"><b>(Weight = 20.0%)</b></p>
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**Gradients:** The performance expectation for each performance measure will use the scoring criteria indicated in Table 1. Each performance measure indicates the relative weights between the Approach/Deployment criteria and the Results criteria.

**Performance Narrative:**

Approach/Deployment

The Laboratory's unique assets include human resources, facilities, equipment, administrative and operational support systems, and LDRD funding. LBNL's leadership employs a systematic approach to ensure senior management attention to unified asset stewardship. The Deputy Director for Research has responsibility for the stewardship of research program assets (scientific and engineering personnel, LDRD), and the Deputy Director for Operations is responsible for the stewardship of operational and administrative infrastructure (facilities, equipment, institutional systems, administrative and operations support personnel). The Director's Action Committee (DAC) is the Laboratory's final planning approval and decision-making group. The DAC annually reviews plans and recommends priorities in the Institutional Plan, the Strategic Buildings Plan, facility and capital resource allocation, for human resources, the level of LDRD, and indirect costs (including maintenance budgets). Key annual activities that contribute to the stewardship of assets include: the field budget call and review (for research programs and projects), the corollary facilities project call, the LDRD call, review and allocation process, and the indirect (overhead) budget review.

The Laboratory leadership remains focused on efficient resource management and controlling indirect costs to steward the funding available to execute the Laboratory's R&D missions, while concurrently safeguarding the public investments in science. The Deputy Director for Operations is delegated responsibility for all operations and administrative funding and staff that support the execution of the Laboratory's mission. Operations and business divisions and departments continue to be externally peer-reviewed regularly like the scientific divisions. The Internal Audit group also assists senior Laboratory management by assessing financial and other risks, and controls to mitigate and address those risks.

Several planning and management information systems support both resource management decision-making and the control and stewardship of assets. These include a budget and resource Management Report (on multimedia CD), institutional systems for Financial Management, Procurement/Receiving/Payables, Billing and Accounts Receivable, Project Management Tracking, Property Management, Travel Management, Facilities and Space Management, and others. Ongoing employee training in

these systems is promoted. LBNL continues to invest in a strategic, multi-year data warehouse project known as the Berkeley Laboratory Information System (BLIS) that will integrate many of these business and administrative systems.

LBNL participates in the DOE Financial Management Systems Improvement Council (FMSIC) and several DOE CFO conferences, which provide opportunities for communications with other DOE laboratories on systems development, e-commerce, cost reduction strategies, and best practices. The Laboratory is planning to support DOE corporate management information initiatives including: ePME (Electronic Portfolio Management, Tracking and Reporting Environment) to track, manage and report on R&D projects; I-Manage (Integrated Management Navigation System) for integration of budget reporting and execution, and managerial cost accounting; and STARS (Standard Accounting and Reporting System) that will link budget formulation and execution with financial and cost accounting, reporting, and performance measurement.

Strategic Facilities and Infrastructure planning and Human Resource development remained important areas of institutional asset stewardship. Stewardship of physical assets includes planning for facilities, space utilization, and maintenance. LBNL has a 10-year Strategic Facilities Plan and a Comprehensive Facilities Plan (20-year Master Plan updated every 5-years) to describe investments needed to develop land and capital assets and sustain its future scientific productivity. LBNL continues to use a Risk-Based Priority Matrix for integrated review and ranking of all capital and plant project needs. It has commenced updating a 20-year Long Range Development Plan (LRDP) and Environmental Impact Report (EIR), which is scheduled for completion in FY2004. Maintenance plans and budgets are developed annually in the context of a 5-year Maintenance Plan. An Asset Management System is a web-accessible database used to manage the property inventory at LBNL. A Laboratory space database (Odyssey) and a DOE database, the Facilities Inventory Management System (FIMS) are used to track all assets such as buildings, trailers, equipment, and roads, and to assist in decision-making regarding building utilization and space charges. A multi-functional, integrated resource management application named MAXIMO is used to support a plant operations functions including: work orders for maintenance, crafts and labor, purchasing and inventory management, capital equipment management and maintenance scheduling, vehicle fleet management, and others.

## Results

### Management Response to Issues:

Laboratory management responded promptly and substantially when several external audits and internal findings surfaced deficiencies in financial accounting, procurement, and property management. (Further details on these issues can be found in the respective functional and Computing Sciences sections of this appraisal.) A new Business Services Division was formed combining the former Financial Services, Administrative Services, and Human Resources Departments, and an experienced Laboratory Senior Manager was appointed as Director. A new acting Chief Financial Officer (CFO) was also brought into the Laboratory. Although this position is in the new division, it concurrently reports directly to the LBNL Director. Other personnel changes occurred in management of the Energy Sciences Network in Computing Sciences. New procurement, small purchase card, and property management systems and procedures were instituted.

#### Continued Flat Overhead:

Remarkably, LBNL maintained a nearly flat institutional indirect cost rate in FY2003 despite several increased cost drivers, including payroll burden increases due to rising health-care costs, increased electric utility costs, the absorption of waste management into overhead (vs. direct-funding), administrative costs associated with compliance with new DOE travel regulations, and other unfunded requirements. As a percentage of Operating costs, indirect costs comprised ~26.42% of the total versus 26.26% in FY2002. The Laboratory also maintained a research to support staff cost ratio of 2.2, unchanged since FY1999.

#### Other System Improvements:

In FY2003, LBNL instituted Activity Based Budgeting to better plan and manage overhead by identifying the costs and benefits associated with each institutional indirect cost category, organizational burdens, and recharge centers. The Procurement Card system and process were overhauled and controls strengthened. A Research Administration Proposal/Project Information Database (RAPID) system was instituted, integrated with the Laboratory's human resource and financial management systems, to facilitate Work For Others (WFO) proposal development and project management. The Budget and Resource Management Report was further improved for user friendliness and indirect cost functional forecasting.

#### DOE Financial Management Support:

LBNL's Functional Support Cost Report was reviewed and commended by DOE auditors as a comprehensive, well-organized document reflecting costs by functional activity, with no significant findings or recommendations for improvement. Through FMSIC and DOE conferences, LBNL is developing local systems to implement and support the DOE-wide initiatives in ePME, IManage, and STARS.

#### LDRD:

LBNL implemented its FY2003 LDRD program consistent with the requirements of DOE Order 413.2 and supplemental guidance and requirements from the DOE Secretary, Office of Science, and DOE-CFO. The program continues to seed fund a broad range of frontier projects built upon core competencies and capabilities, and focused on emerging scientific opportunities and strategic directions of the Laboratory. LDRD projects continue to make strong contributions to the ALS/x-ray science program, scientific computing, physical biosciences, astrophysics, and other areas. LBNL hosted three reviews of the program during FY2003 by the DOE-CFO's office, by a House Appropriations Special Investigative Committee, and by the General Accounting Office (GAO). All of these reviews noted the high value of the program to the Laboratory, to DOE, and to the Nation.

#### Facilities/Physical Assets:

LBNL continues to make excellent use of facility plans and information management systems to steward its physical assets, identify infrastructure needs, and prioritize infrastructure resource investments. LBNL's Institutional Plan and Strategic Facilities Plan were revised in April and May 2003. Areas of notable achievement include the following:

- LBNL developed a proposal to secure an additional \$1.5M for the Excess Facilities to deconstruct Bldg 51B (Bevatron Experimental Beam Hall) in March 2003.
- The NEPA documentation and ground lease for the Molecular Foundry were approved by the U.C. Regents in April and May 2003.
- User Support Building – Critical Decision-0 (Mission Need) was approved in April 2003.
- A Secretarial Waiver approved the “spacebank” requirement for new construction of Molecular Foundry and the User Support Building
- Continued reliability of the Laboratory’s high voltage electrical system, including a reduction in unplanned customer-hour outages to only 265, compared to the prior year’s 15,810 hours. Using an industry accepted measure, LBNL attained a reliability factor of 99.9998 percent.

A performance issue discovered in FY2003, while largely outside the scope of this measure, was of sufficient gravity to affect the stewardship of physical assets. The Laboratory determined that there was \$76M in unidentified, depreciated assets on its balance sheet, booked as fixed assets between 1987 and 1998. These discrepancies between the property database and financial statements are a property accounting matter within the Finance Department. However, Property Management was aware of the discrepancies but failed to effectively address them. More seriously, the 39 control accounts involved were included in the inventory base in FY2002 and reported as located when, in actuality, they were not touched during the annual inventory. Including these assets and reporting them as accounted for exhibited poor judgment. Appropriate corrective actions were identified and are being implemented.

<b>Performance Rating (Adjectival): Excellent</b>
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85.00%
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<b>Performance Measure:</b> <b>1.1.c   Research Support from Other Sponsors</b>
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<p>Evaluation of management's effectiveness in fostering non-DOE sponsored work and collaborations that benefit from the unique research competencies and scientific facilities of the Laboratory, build upon and complement DOE's mission, and advance the nation's scientific and economic interests. The assessment will focus on the planning and management of non DOE sponsored research, institutional resources to enable externally sponsored work, and the coordination with DOE. <b>(Weight = 20.0%)</b></p>
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**Gradients:** The performance expectation for each performance measure will use the scoring criteria indicated in Table 1. Each performance measure indicates the relative weights between the Approach/Deployment criteria and the Results criteria.

**Performance Narrative:**

Approach / Deployment

As a National as well as a DOE Laboratory, LBNL seeks to leverage its unique competencies and facilities as a scientific resource to serve the national interest as well as to pursue DOE missions. It fosters and conducts a broad range of science supported by a broad range of sponsors. This has a synergistic effect, serving to build and sustain capabilities that serve both DOE's and sponsors' missions.

Laboratory management efforts have been directed toward strengthening relationships with key Work For Others (WFO) sponsors including the National Institute of Health (NIH), NASA and its laboratories, the Department of Homeland Security (DHS), and others including DOD and EPA. LBNL's strategic mission focus on quantitative systems biology builds on research capabilities developed by the Office of Biological and Environmental Research (BER) to support NIH objectives to understand how cells and organisms function, and how disease processes come about so that they can potentially be controlled. The DNA sequencing resources of the JGI are increasingly performing work for other agencies. In astrophysics, collaboration with NASA is growing in pursuit of a satellite mission to measure the "dark energy" force in the universe. LBNL has established an Office of Homeland Security to engage with DHS planners and coordinate Laboratory capabilities in support of this new agency's mission. The Laboratory's growing nanoscience research has strengthened ties with universities and industry. Work continued with and for the state of California and industry in building energy efficiency and reliability in the electrical grid.

LBNL's Sponsored Projects Office (SPO) coordinates and administers the agreements with external organizations, including WFO, Cooperative Research and Development Agreements (CRADAs), and User Agreements. These total nearly 600 transactions per year. Related support is provided by the Technology Transfer, Patent, and Financial Services Departments. SPO is also the lead interface organization working with DOE on contracting officer approval of WFO projects. Financial Services supports DOE modifications to the LBNL contract to include funding received from external sponsors and partners. Collectively, these organizations implement DOE requirements for the Laboratory entering into and conducting such work, i.e., DOE Orders 481.1B (WFO), 482.1 (Technology Partnering), and 483.1 (CRADAs). To assist the scientific divisions in developing these projects with

sponsors, SPO also provides guidance and forms on its website, and assigns staff to work with the scientific divisions. Division resource managers matrix-assigned from the Administrative Services Department support Principal Investigators with proposal preparation, cost monitoring, and other post-award administrative services.

### Results

In FY2003, LBNL's WFO portfolio grew to ~\$103.7M, or ~22% of total funding and nearly 25% of operating funding. LBNL has been among the most successful DOE laboratories in garnering funding support from non-DOE sponsors, including other federal agencies, state and local governments, academia, industry, and non-profit organizations. Importantly, all non-DOE sponsored projects are consistent with DOE and Laboratory missions, and generally serve to advance DOE's interests and the Laboratory's capabilities as well as to perform work for the sponsors.

LBNL is continuing as the contracting office for the follow-up phase of the largest DOE CRADA ever: the tri-lab (LLNL, SNLL, LBNL) agreement with SEMATECH (consortia of semiconductor manufacturers) developing the next generation of chip fabrication technology based on extreme ultraviolet (EUV) lithography.

In May 2003 after several years of internal development, LBNL implemented a PeopleSoft Grants Management module, integrated with other PeopleSoft enterprise systems at LBNL for financial management and human resource management. The Research Administration Proposal/Project Information Database (RAPID) is an integrated institutional information system designed to meet the needs of Laboratory scientists, managers, and support staff in developing and managing the execution of externally sponsored work. For the first time, it provides real-time financial information on WFO and CRADA projects underway, provides on-line access to sponsored research data, and allows for various institutional rollup reports. Implementation of RAPID also resulted in cost savings of ~\$11K per month by shutting down the legacy system and avoiding licensing and other system costs.

LBNL partnered with DOE to realize other WFO process efficiencies. These include: electronic (email) routing of proposals and approvals, a DOE delegation for LBNL to sign standard, non-federal WFO agreements, and DOE review of only those WFO proposals that sponsors have agreed to fund. Some of these "best practices" have also been adopted by the Livermore Laboratory.

More rapid turn-around times in DOE's approval of WFO proposals have reduced the number of "urgent" transactional requests by SPO to the BSO contracting officer, but some opportunity remains for further improvement. The Office of Science desires to oversee Laboratory WFO at a systems level as an institutional "program" beyond the transactional level project reviews required by the DOE WFO Order. The BSO would like to partner more closely with the Laboratory in any subsequent development of this system to explore its potential for this institutional program oversight objective, and, potentially, for further transactional process automation such as the addition of electronic signatures. With the closure of the NNSA-Oakland office and the transition of financial support services to DOE-CH in FY2004, there may be other streamlining opportunities that the Laboratory can realize in partnership with the BSO.

<b>Performance Rating (Adjectival): Outstanding</b>
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<b>92.00%</b>
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<b>Performance Measure: #1.1.d Community Relations and Science Education</b>
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<p>Evaluation of management's approach and effectiveness in strengthening relationships with the community and in advancing science education related to Laboratory programs. The assessment will focus on management's effectiveness in addressing community issues in a proactive manner and the successful implementation of science education programs. <b>(Weight = 20.0%)</b></p>
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**Gradients:** The performance expectation for each performance measure will use the scoring criteria indicated in Table 1. Each performance measure indicates the relative weights between the Approach/Deployment criteria and the Results criteria.

**Performance Narrative:**

The Head of Public Affairs continues to hold weekly Public Affairs Council meetings, composed of professional staff in the Government and Community Relations Office, the Communications Department, and the Center for Science and Engineering Education (CSEE). The Public Affairs Council develops external and internal relations strategies and reviews the implementation of programs designed to raise awareness and understanding among key constituents. It also is responsible for identifying opportunities for the Laboratory to make valued contributions to neighboring communities. The inclusion of CSEE in Public Affairs ensures that the Laboratory's contributions to local science and engineering education efforts remain a leadership priority.

Laboratory Management involvement in community activities in FY2003 included participation on local boards and commissions, educational organizations, Chambers of Commerce, community foundations, environmental groups, as well as service clubs. The Laboratory also endorsed enhanced communication with community groups through an expanded distribution of Laboratory news; a community newsletter; *Science on the Hill*; an active speaker's bureau; and the Community Relations/Science education outreach program, Berkeley Lab Friends of Science.

Results

The Public Affairs Department and its Community Relations Office developed and/or sponsored programs to promote ongoing information/outreach efforts to educate local communities about the Laboratory's research activities, science education, and careers in its relationship building. The Laboratory's goal to improve science education at all grade levels, with focused partnerships in several local school districts, was realized during FY2003:

Lab Engineers Help School Robotics Team: Berkeley Laboratory's Engineering Division worked with a dedicated team of 20 students from Oakland's Castlemont High School to help them compete for the fourth year in a row in the U.S. FIRST Robotics Competition. Through its partnership with LBNL, the Castlemont High School Robotics Team students are exposed to science and math beyond their regular classes.

Education Effort Reaches Out to Scientists of Tomorrow: The Laboratory's education efforts reached out to scientists of tomorrow with the launch of a new tour program for local school children. LBNL's Center for Science and Engineering Education (CSEE) provided field trips to the Lab for Oakland and Berkeley public school students. Dozens of schools groups, from elementary, middle- and high school levels, journeyed to the Lab for hands-on activities and demonstrations, as well as tours of Laboratory facilities and the opportunity to meet and talk with leading scientists. The Laboratory always had tours but this was the first time elementary school children as young as the fifth grade was included.

Careers in Science and Technology Program: CSEE initiated a year-round Careers in Science and Technology program that provides outreach to the community by providing schools and teachers with speakers representing careers in Berkeley Lab's world of science and technology.

Laboratory Researchers Expand Horizons of Young Women during Math and Science Conference: The Laboratory participated in the 24<sup>th</sup> Annual Tri-Valley Expanding Your Horizons Math and Science Conference on March 8, 2003 at the Pacific Bell Administrative Center in San Ramon. The purpose of the conference is to increase the interest of young women in mathematics and science through positive, hands-on experiences; to foster awareness of career opportunities in math- and science-related careers, and to provide young women with opportunities to meet and interact with positive role models who are active in math- and science-related careers.

During FY2003, the Laboratory initiated the following activities to strengthen its relationship with the local community.

Works with City of Berkeley Environmental Staff: The Laboratory continued its efforts to work closely with the City of Berkeley's environmental staff and provide updates on its environmental programs, in particular, the Resource Conservation and Recovery Act (RCRA) site restoration activities, and its treatability notifications.

Participation in Public Hearing on EPA "Delisting" Decision: Berkeley Lab sponsored or participated in official public meetings to inform the public about Laboratory programs. On January 23, 2003, the U.S. Environmental Protection Agency sponsored a Q&A session and public discussion for certain mixed wastes at Berkeley Lab. The decision will allow the Laboratory to dispose of residue from a treatment process developed for tritiated mixed wastes.

Public Comments on The Molecular Foundry Project: The community was invited to provide comments on the Draft Environmental Assessment for the proposed construction and operation of the Molecular Foundry project. LBNL proposes to construct this interdisciplinary nanoscience facility, a six-story laboratory building of approximately 86,500 gross square feet, in the southeast corner of the site. It will be a national facility open to visiting scientists. Construction is scheduled to take place between January 2004 and February 2006.

Alta Bates Hold Joint Drill Exercise: In December 2002, the Laboratory and Alta Bates Summit Medical Center engaged in a joint emergency drill exercise. The exercise began at Building 85 and ended with victims being treated through the Alta Bates emergency department.

Fort Mason is "Re-Lamped": Through a collaboration with the Golden Gate National Recreation Area, one of 385 National Park Service sites, LBNL installed 50 Berkeley Lamps in its offices at Fort Mason, with the assistance of DOE. The Berkeley Lamp, developed by lighting researchers at the Laboratory, has been shown to reduce lighting energy use in offices 50-60%. A celebration of the "re-lamping" of Fort Mason was held on October 17, 2002.

Partnership Established to Light City of Oakland Established: Berkeley Lab was among the partners providing free and low-cost energy efficiency services and incentives for Oakland businesses and residents, thanks to a \$6 million city grant from the California Public Utilities Commission. The Lab will provide technical assistance in lighting and HVAC retrofits.

SMUD-DoubleTree Hotels Lighting Collaboration: LBNL entered into a partnership with the Sacramento Municipal Utility District (SMUD), DoubleTree Hotels and manufacturer Watt Stopper, Inc., to study the energy savings of a new energy-efficient lighting control system at the DoubleTree Hotel in Sacramento, California. The system is based on LBNL research to improve hotel room energy efficiency, in particular bathroom lighting. Energy savings up to 75% of total lighting energy use are expected.

Support for Energy Employees Occupational Illness Compensation Program Act (EEOICPA): More than 300 claims were filed (total of both Federal and Section D/State claims) during the visit of the EEOICPA Traveling Resource Center to the San Francisco Bay Area during the week of March 3, 2003. These results were due in large part to strong LBNL outreach and communication efforts.

Berkeley Lab – Neighbors Conversation: The Laboratory Director hosted the first Laboratory-neighbors conversation in May 2003. This effort was designed to engage interested citizens in a conversation about the Laboratory and to inform the community about the upcoming Molecular Foundry project, as well as other research activities at LBNL. It was a successful meeting with over 100 people attending, including the Berkeley Mayor.

LBNL in the National Press: The Public Affairs Department's outreach efforts resulted in achieving positive stories in the national media such as *Nature*, *Science Magazine*, *Honolulu Advertiser*, *New York Times*, *The Scientist*, and the *Associated Press*. The headlines included "Sea Squirt Genome Sheds Light on Vertebrate Evolution," "34 Supernovae in One Year," Supercomputer in Oakland Seeks Secrets of Ages," "Initial Sequencing and Comparative Analysis of the Mouse Genome," "Disappearing Neutrinos at KamLAND Support the Case for Neutrino Mass."

<b>Performance Rating (Adjectival): Outstanding</b>
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<b>95.00%</b>
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**Performance Measure: #1.1.e Diversity Leadership and Awareness**

Evaluation of senior management's effectiveness in increasing the awareness of diversity in all divisions of the Laboratory. The assessment will focus on the development and implementation of divisional diversity plans and their innovative actions to enhance the work environment for all employees and to engage in proactive methods of diversity outreach and recruitment designed to promote equality of opportunity. **(Weight = 20.0%)**

**Gradients:** The performance expectation for each performance measure will use the scoring criteria indicated in Table 1. Each performance measure indicates the relative weights between the Approach/Deployment criteria and the Results criteria.

**Performance Narrative:**
Approach/Deployment

The Laboratory leadership continued to emphasize the responsibility of management laboratory-wide to support and pursue diversity within the division workforces and through their recruitment efforts. As in FY2002, each of the major Laboratory organizations posted a diversity plan on the web which outlined overall goals, specified accomplishments relative to the prior year's plan, and provided an action plan for the current year.

The majority of LBNL's efforts related to improving the diversity of hires are directed toward the expansion of student internship/summer employment programs and diversity outreach to high schools and universities with diverse student populations, through the lab-wide School-to-Career and Center for Science and Engineering Education programs. Although these programs have been in place for several years, Diversity Plan initiatives have significantly expanded visibility and opportunities for student placements. At the end of FY2002, the Laboratory implemented another tool to expand and integrate Diversity Plan activities, in the form of the Best Practices Diversity Council (BPDC). The BPDC is made up of representatives from each division, which includes under its charter activities such as creating "synergy" between division/department diversity action plans, developing and communicating best-practices models, and developing a diversity balanced scorecard.

Results

Through comparison of FY2002 and FY2003 Diversity Plans it is evident that divisions are continuing the efforts undertaken in previous years and in several cases are expanding those efforts and initiating new actions. The Diversity Plans have improved in balancing the extent to which they address the required elements of 1) "innovative actions to enhance the work environment for all employees" and 2) "methods of assuring hiring pools that are as diverse as possible." However, the "Accomplishments" section of the Plans seldom indicate whether, or the degree to which, efforts have resulted in diversity changes in hiring pools or in actual hires of under-represented groups. These results would be more pertinent at the institutional level, and the self-assessment had some quantitative data, but not trend data.

The self-assessment also did not address the extent to which the Council engaged in the activities under its charter in this first year, but the BPDC Chair did participate in the Director's review of the FY2003 Diversity Plans drafted by each division. LBNL has demonstrated through the development and implementation of the FY2003 Diversity Plans that it remains committed to maintaining a heightened level of diversity awareness across the Laboratory and at all levels.

<b>Performance Rating (Adjectival): Excellent</b>	<b>88.00%</b>
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## ATTACHMENT

The performance expectation for each performance measure will use the scoring criteria indicated in Table 1 below. Each performance measure indicates the relative weights between the Approach/Deployment criteria and the Results criteria.

Table 1, Appraisal Scoring Guidelines for Laboratory Management

<b>Narrative Rating (Score Range)</b>	<b>Approach/Deployment</b>	<b>Results</b>
Unsatisfactory (59% and Below)	Little or no systematic approach evident; anecdotal information	Little or no results in key mission and business areas.
Marginal (60 to 69%)	Beginning of a systematic approach to the key mission and business areas. Early stages of a transition from reacting to problems to a general improvement orientation. Major gaps exist in deployment that would inhibit progress in achieving the key mission and business objectives.	Early stages of developing; some improvements and/or early good performance level in a few key mission and business areas.
Good (70 to 79%)	A sound systematic approach, responsive to the key mission and business areas. A fact-based improvement process in place in key areas; more emphasis is placed on improvement than on reaction to problems. No major gaps in deployment, though some areas may be in the very early stages of deployment.	Improvement trends and/or good performance levels reported for most key mission and business areas. No pattern of adverse trends and/or poor performance levels in the key mission and business areas. Some trends and/or current performance levels show areas of strength and/or good to very good relative performance levels.
Excellent (80 to 89%)	A sound systematic approach, responsive to the key mission and business areas. A fact-based improvement process is a key management tool; clear evidence of refinement and improved integration as a result of improvement cycles and analysis. Approach is well developed, with no major gaps; deployment may vary in some areas.	Current performance is Excellent in most key mission and business areas. Most improvement trends and/or current performance levels are sustained in most other areas. Many to most trends and/or current performance levels show areas of leadership and very good relative performance levels.
Outstanding (90 to 100%)	A sound systematic approach, fully responsive to key mission and business areas. A very strong fact-based improvement process is a key management tool; strong refinement and integration - backed by Excellent analysis. Approach is fully deployed without significant weaknesses or gaps in the key areas.	Current performance is Outstanding in most key mission and business areas. Excellent performance levels in most other areas. Strong evidence of industry and benchmark leadership demonstrated in many areas.

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BACK OF LABORATORY MANAGEMENT ATTACHMENT

## **OPERATIONS & ADMINISTRATION**



**Performance Area: ENVIRONMENT, SAFETY AND HEALTH**

**Preamble:** The Laboratory's goal is to accomplish its mission cost-effectively while striving for an injury-free workplace, minimizing waste streams and adverse impacts to the public and environment from its operations.

The following Performance Objective, Criteria and Measures are linked to best practices and national standards for ES&H programs and systems. They include best practices in self-assessment and hazard analysis, certified/independently validated ES&H management systems, and process and outcome measures to validate Integrated Safety Management.

Performance Period: Unless otherwise specified in the measures, the performance period is October 1, 2002 through September 30, 2003.

**Performance Objective: #1.0 Do Work Safely**

The Laboratory uses best practices and certified/independently validated management systems to integrate ES&H into Lab work processes at all levels so those missions are accomplished while protecting the worker, the public and the environment.

**(Weight = 100%)**

**Criterion: #1.1 Best Practices and Certified/Independently Validated ES&H Management Systems**

The Laboratory will assess, develop, and implement best practices and certified/independently validated ES&H management systems based upon industry best practices and international/national standards.

**(Weight = 40%)**

**Performance Measure: #1.1.a Best Practices and Certified/Independently Validated ES&H Management Systems**

The Laboratory will complete scheduled milestones to assess, develop and implement best practices in (i) self-assessment and (ii) hazard analysis and (iii) certified/independently validated ES&H management systems. Agreed upon milestones are the following:

## (i) Best Practices in Self-Assessment

<b><u>Milestones</u></b>	<b><u>Target Completion</u></b>
1. Research DOE and industry benchmarks and standards for SA programs.	11/01/02
2. Select SA best practice criteria (i.e., benchmark/standard) most appropriate for LBNL operations and activities.	11/15/02
3. Define best practice review process	01/15/03
4. Identify review panel and schedule review	3/1/03
5. Complete third party review of SA program	6/30/03
6. Identify gap analysis of LBNL SA program against best practices.	7/30/03
7. Develop best practice improvements identified by gap analysis.	9/30/03
8. Complete any FY03 milestones for implementing best practice improvements.	9/30/03
9. Complete implementation of best practice improvements	TBD (FY04)

## (ii) Best Practices in Hazard Analysis

<b><u>Milestones</u></b>	<b><u>Target Completion</u></b>
1. Develop review criteria for the evaluation of best practices for hazard analysis of the Lab's research and development facilities. Consideration shall be given to practices described in DOE Supplemental Directive 5481.1B, PUB 3000, Chapter 6, and certified ES&H systems with hazard analysis elements.	11/15/02
2. Select independent review panel and schedule review	12/15/02
3. Complete independent review	3/1/03
4. Identify gap analysis of LBNL programs against best practices.	4/1/03
5. Develop best practice improvements to address programmatic deficiencies identified in gap analysis. Improvements include actions for determining applicability of DOE Supplemental Directive 5481.1B for LBNL operations, amending PUB 3000, Chap 6, to institutionalize best practice improvements, and assuring process consistency with hazard analysis elements in proposed certified ES&H systems (see Part II below). Prepare schedule for implementation of best practice improvements.	5/1/03
6. Complete FY03 milestones for best practice improvements.	9/30/03
7. Complete implementation of best practice improvements	TBD (FY04)

## (iii) Certified Independently Validated ES&amp;H Management Systems

<b><u>Milestones</u></b>	<b><u>Target Completion</u></b>
1. Research international/national standards for certification/ validation of ES&H management systems.	12/15/02
2. Select international/ national standards for certification/ validation of ES&H management systems	1/15/03
3. Develop Lab ES&H management systems plan.	6/30/03
4. Conduct assessment by organizations that have experience in ES&H management systems.	TBD (FY04)
5. Develop and implement FY04 milestones/ improvements to address recommendations identified by assessment.	TBD (FY04)
	<b>(Weight = 40%)</b>

## Assumptions:

1. It is expected that to accomplish this measure will be a multiple year effort.
2. This objective is consistent with the ES&H five-year (FY03-FY07) strategic plan.
3. A certified/independently validated ES&H management system will be based on:
  - Principles described by the DOE Office of Science (Card memo) of line management accountability, national standards, oversight, contractor accountability, vision, and incentives
  - International/national standards
  - Self-Assessment against the standards
4. LBNL will notify DOE of complications and delays that result in missing milestone target dates. Contract performance rating will not be lowered when milestones are completed after the proposed target dates with no adverse impacts to the certification/ validation process.
5. To complete the best practice studies and certification process, new milestones will be developed and agreed upon each year by DOE/BSO and LBNL for FY04 and FY05.
6. The selection of the independent review panels for the best practice studies in self-assessment and hazard analysis shall be jointly agreed upon by DOE/BSO and LBNL.
7. The selection of the certification/ validation standards and systems shall be jointly agreed upon by DOE/BSO and LBNL. Certified/independently validated ES&H management systems under consideration include ISO 14001 Environmental Management System elements, Voluntary Protection Program (VPP), OSHAS 18001 Occupational Safety and Health Management System elements, Accreditation Association for Ambulatory Health Care (AAAHC), Emergency Management, and DOE Laboratory Accreditation Program (DOELAP). The DOE/BSO Director and LBNL Deputy Director of Operations will resolve conflicts in the selection process. Contract performance rating will not be lowered in event milestone target dates are missed due to conflict resolution process.
8. Certification/ validation process will be based upon nationally recognized standards and performed by nationally recognized experts.
9. Validation of the best practice improvements shall be conducted by DOE/BSO.

## Gradients:

Unsatisfactory	Little of no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good:	Weighted completion of 11 of 17 milestones scheduled for FY03.
Excellent:	Weighted completion of 13 of 17 milestones scheduled for FY03.
Outstanding:	Weighted completion of 15 of 17 milestones scheduled for FY03.

## Performance Narrative:

The Lawrence Berkeley National Laboratory (LBNL) performance for this metric is outstanding. LBNL completed 17 out of 17 milestones scheduled in FY03 to assess, develop and implement best practices and certified/independently validated Environment, Safety and Health (ES&H) management

systems based upon industry best practices and international/national standards. The areas identified to implement best practices were in Self-Assessment and Hazards Analysis; and to develop action plans for achieving certification or validation of ES&H management systems. To address one of the performance expectations that the Berkeley Site Office (BSO) would be an integral part of the process; best practices activities were conducted jointly between the BSO and LBNL. BSO was involved in the review team selections, assessment criteria and the selection/approval of certified/validation standards. BSO also participated in observing the completion of milestones for best practice improvements. Increased integration of BSO involvement as LBNL moves into implementing program improvements is expected. Full implementation of the best practices and certified/independently validated ES&H Management Systems is scheduled to be accomplished in FY04.

#### **Self Assessment**

LBNL has completed Phase I of a two phase process to achieve the Department of Energy (DOE) Office of Environment, Safety, and Health Self-Assessment Program Accreditation. Resultant from the DOE Review Panel which evaluated the self-assessment program in place, it was recommended that LBNL move to the next step of accreditation. The LBNL Self-Assessment Program is scheduled to be presented to the DOE Accreditation Board at Head Quarters (HQ) in FY04. The Panel's Report identified a number of noteworthy practices and some opportunities for improvement; many of which have been consistent with BSO's evaluations. All eight of the FY03 milestones were completed on or before schedule.

#### **Independent Validation of the LBNL Hazards Analysis Program**

The independent review panel indicated that the existing hazards analysis program at LBNL is excellent compared to industry best practices. LBNL's assessment and the independent panel review identified a number of opportunities to further strengthen the program. A gap analysis was conducted and an implementation action plan was developed to address these improvements. A major accomplishment resultant from this validation was the removal of OAK SD 5481.1B, Safety Analysis & Review, from the LBNL contract. Generally, LBNL will use the Unified Building Code and the California Building Code as guidance to determine hazard limits. The most difficult task will be to demonstrate that older facilities at the site are in compliance. All six of the FY03 milestones were completed either on or before schedule.

#### **Identification of ES&H Management Systems for Certification/Validation**

Corrective action plans have been completed by LBNL and approved by the BSO for the certification systems/validations selected. The plans have been of high quality. The BSO is involved in the certification/validation process and is expected to remain an integral part of the process to completion. In FY03, LBNL (with BSO concurrence) made a change in the selection of standards for one of their ES&H management systems. The Occupational Health and Safety Program certification standard was changed from Voluntary Protection Program (VPP) to Occupational Health and Safety Assessment Series (OSHAS) 18001. It has been agreed to by BSO and LBNL that this change will not delay the final end date of implementing program certification. All three milestones in certification/validation were successfully completed on or before schedule.

<b>Performance Rating (Adjectival): Outstanding</b>	<b>95.00%</b>
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<b>Criterion:</b>	<b>#1.2 ISM System Process Measures</b>
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<p>The Laboratory uses the five core functions and seven guiding principles of Integrated Safety Management (ISM) in its management and work processes.</p>	<b>(Weight = 30%)</b>
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**Assumptions:**

1. Supplemental information on the quality and effectiveness of the Berkeley Lab's ISM program can be provided through the BSO/LBNL Operational Awareness (OA) Program. To support the gathering of information, the Laboratory reports on significant changes in ES&H systems and processes at the quarterly OA meetings. Examples of significant changes include modifications of any ISM plans; changes to ES&H policies and requirements in the Regulations and Procedures Manual (RPM), LBNL/PUB-3000, Operating and Assurance Plan (OAP), and Work Smart Standard (WSS) set; and alterations in EH&S Division staffing patterns, allocation of resources, and/or organizational structure.
2. The Laboratory's self-assessment program is a major component for evaluating ISM at the Laboratory. BSO personnel are invited to participate as observers in self-assessment activities, including, but not limited to, validation of division self-assessments and integrated functional appraisals. DOE observers can provide feedback on the Laboratory's self-assessment activities. Such feedback can be used as supplemental information to address the quality and effectiveness of the Laboratory's Self-Assessment Program.
3. ISM plans refers to the Laboratory's Institutional Safety Plan, each division's ISM plan, and the Operations departmental (Facilities and Directorate) ISM plans.
4. Subcontractor operations/personnel are included in implementation of ISM if the subcontractor is performing part of the Laboratory's operations and reporting its hours to the Laboratory. To this end, the Laboratory's contracting process evaluates and considers the safety record of prospective subcontractors; once selected, subcontractor statistics are gathered and performance tracked separately. Subcontractors are excluded from LBNL OSHA reporting if they are "servicing" the Laboratory (e.g., copy machine vendors or other transient workers).
5. Peer reviews, existing procedures, implementing memoranda, Laboratory tracking system data, and other work process products serve as demonstrable evidence in contribution to satisfaction of measure gradients. Successes and difficulties associated with these processes are included in the report. It is not the intention of this measure to foster the generation of supportive or demonstrable documents other than those needed or necessary to perform the work.
6. The evaluation of the process measure is the DOE validation of the effectiveness of ISM implementation.
7. Environmental management is a key component of the Lab's ISM plan. Environmental performance as described in FY02 Appendix F Measure 1.2.h, Waste Reduction and Recycling, Measure 1.2.g, Tracking Environmental Incidents, and Measures 1.3.a, Environmental Restoration Cost Variance, and Measure 1.4.a, Environmental Restoration Schedule Variance, shall be evaluated in Process Measure 1.2.c, Perform Work, and reported at least quarterly in either Operational Awareness meetings, DOE/LBNL program meetings, ES&H quarterly reports, or Site Environmental Reports. Overall rating of environmental performance is the average gradient performance for all four measures.

**Performance Measures: #1.2.a Work Planning**

Line management provides evidence that the ISM Division Plans and work planning adequately identify and prioritize resources to address programmatic needs and work safety. Line managers regularly participate in ES&H activities. **(Weight = 7.5%)**

**Gradients:**

Unsatisfactory	Little or no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good	More than 70% of Division ISM plans have been reviewed and updated within past year. ISM plans are evaluated for quality of content to address the Division scope of work and for consistency with institutional ISM requirements. Work planning demonstrates that work and safety priorities are adequately balanced. Line managers regularly participate in ES&H activities. The institutional ISM plan has been reviewed and updated for changes in site-wide scope of work.
Excellent	More than 80% of Division ISM plans have been reviewed and updated within past year. ISM plans are evaluated for quality of content to address the Division scope of work and for consistency with institutional ISM requirements. Work planning demonstrates that work and safety priorities are adequately balanced. Line managers regularly participate in ES&H activities. The institutional ISM plan has been reviewed and updated for changes in site-wide scope of work.
Outstanding	More than 90% of Division ISM plans have been reviewed and updated within past year. ISM plans are evaluated for quality of content to address the Division scope of work and for consistency with institutional ISM requirements. Work planning demonstrates that work and safety priorities are adequately balanced. Line managers regularly participate in ES&H activities. The institutional ISM plan has been reviewed and updated for changes in site-wide scope of work.

**Performance Narrative:**

The Laboratory demonstrated outstanding performance in the area of work planning as evidenced by the Integrated Safety Management (ISM) Division Self- Assessment.

All of the Division ISM plans and Institutional ISM Plan have been reviewed and updated in a timely manner and found to be effective. Line managers actively participate in inspections. All divisions had effective systems in place to communicate ES&H concerns, except Administrative Services Division (ASD) in the Directorate. Resources were adequately allocated to address ES&H deficiencies discovered during workspace inspections. An observation was that several divisions (Nuclear Science, the Directorate and Physics) do not use the institutional corrective action tracking system and had difficulties in demonstrating that deficiencies found were corrected in a timely manner. Almost all workspaces were inspected during the performance period and 90.7% of the Laboratory Corrective Action Tracking System (LCATS) corrective actions were completed.

<b>Performance Rating (Adjectival): Outstanding</b>
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92.00%
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**Performance Measure: #1.2.b Identify and Control Hazards**

Divisions have a process to appropriately identify, analyze, and categorize the hazards and have identified the appropriate requirements to mitigate the risks associated with the division's work.

**(Weight = 7.5%)**

**Gradients:**

Unsatisfactory	Little or no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good	Hazards have been appropriately identified for more than 70% of the division's self authorized work and more than 90% of work requiring formal authorizations (i.e., RWAs, RWP, AHDs, SSAs).
Excellent	Hazards have been appropriately identified for more than 80% of the division self authorized work and more than 95% of work requiring formal authorizations.
Outstanding	Hazards have been appropriately identified for more than 90% of the work requiring division self-authorization and 100% of work requiring formal authorizations.

**Performance Narrative:**

Overall, the Laboratory's hazard analysis program is effective. There has been significant progress in the improvement of the processes in place to identify the hazards associated with work performed. The LBNL commitment to prioritize and allocate resources to resolve the long standing issue on safety analysis performance criterion is a noteworthy accomplishment.

The Hazards Analysis Program was independently validated during the performance period and several noteworthy practices were identified, as well as some opportunities for improvement. The Laboratory has developed a corrective action plan to address improvement needs identified as a result of the validation. The Laboratory systems are effective in identifying hazards during the work planning process. In most cases, the hazards documents were developed, reviewed and updated in a timely manner. There were no incidents during the performance period involving work not covered by the appropriate hazards document.

One observation was that there was some confusion during the LBNL Division Self Assessments on the inventory of Activity Hazards Documents (AHDs). EH&S did not appropriately review all AHDs. Due to problems in the hazards document inventory. EH&S relies on the divisions to provide them with updates on the hazards analysis documents to keep them abreast of work hazard changes and to assure the appropriate EH&S reviews are conducted. EH&S and the line managers need to work together more diligently to develop a better system for tracking these documents. ). It was noted in the LBNL Self-Assessment Report that some division management are not aware of all authorizations for which they are responsible.

Those divisions that use the Hazards, Equipment, Authorizations, and Review (HEAR) Database to identify hazards have the most reliable system for tracking hazards and making accurate information available for institutional use. The BSO randomly reviewed data in the HEAR Database. The results of the review were out of 88 entries reviewed, 19 had current dates, 18 had expired dates and 51 entries listed had no dates entered. It was determined that 48.6% of the data reviewed showed expired authorizations which may still be in effect. The items which had no dates listed were excluded from the calculation. This does not imply that the authorizations are expired, rather it demonstrates the HEAR Database is not maintained up to date. The Laboratory needs to do a better job to keep this system current since it is the institutional tool to inventory hazards and feeds into other Laboratory databases.

It is still difficult for the BSO to assess the adequacy of the self-authorized work systems due to the varying degree of documentation from division to division. Improvements are needed to ensure that the systems in place are effective.

In many Divisions, 100% of the workspaces are inspected, and 95% of the findings are corrected in a timely manner. The divisions are doing a better job of identifying and fixing safety issues in their workplace.

<b>Performance Rating (Adjectival): Outstanding</b>	<b>90.00%</b>
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**Performance Measure: #1.2.c Perform Work**

Work is performed within the conditions and requirements for ES&H specified by Lab policies and procedures. **(Weight = 7.5%)**

**Gradients:**

Unsatisfactory	Little or no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good	More than 80% of authorized work (i.e., SAA, AHD, RWA, RWP, X-Ray, SSA, SAD) is in compliance (note: RWA compliance is measured against major and significant deficiencies). More than 80% of required ES&H training is completed. More than 90% of serious and imminent danger situations, as defined by LCATS Hazard Level 1 and 2, are identified, analyzed for root causes, and mitigated within the specified timeframe. Environmental performance is achieved at an overall Good Gradient Level as specified in the FY02 Appendix F performance measures 1.2.h, 1.2.g, 1.3.a and 1.4.a (see assumption #7).
Excellent	More than 85% of authorized work (i.e., SAA, AHD, RWA, RWP, X-Ray, SSA, SAD) is in compliance (note: RWA compliance is measured against major and significant deficiencies). More than 85% of required ES&H training is completed. More than 95% of serious and imminent danger situations, as defined by LCATS Hazard Level 1 and 2, are identified, analyzed for root causes, and mitigated within the specified timeframe. Environmental performance is achieved at an overall Excellent Gradient Level as specified in the FY02 Appendix F performance measures 1.2.h, 1.2.g, 1.3.a and 1.4.a (see assumption #7).
Outstanding	More than 90% of authorized work (i.e., SAA, AHD, RWA, RWP, X-Ray, SSA, SAD) is in compliance (note: RWA compliance is measured against major and significant deficiencies). More than 90% of required training is completed. 100% of serious and imminent danger situations, as defined by LCATS Hazard Level 1 and 2, are identified, analyzed for root causes, and mitigated within the specified timeframe. Environmental performance is achieved at an overall Outstanding Gradient Level as specified in the FY02 Appendix F performance measures 1.2.h, 1.2.g, 1.3.a and 1.4.a (see assumption #7).

**Performance Narrative:**

Overall the Lab's performance meets the gradient for outstanding. The work at LBNL is performed in a safe manner in accordance with the safety requirements and work authorizations [AHDs, Satellite Accumulation Areas (SAAs), Radiological Work Authorizations (RWAs) and Radiological Work Permits (RWPs), X-rays, Safety Analysis Documents (SADs)]. Work was performed in compliance

with more than 90% of these authorizations. There were 7 major and 1 serious Radiation Work Authorization violations for the performance period involving Nuclear Science, Life Sciences, and the Environment, Health and Safety (EHS) divisions. It is difficult to determine how many imminent danger and serious work situations existed during the performance period because the tracking systems in place do not easily lend themselves to this data retrieval unless the incident results in a reportable occurrence or are tracked in LCATS. LBNL reported 2 imminent danger situations, but the review of a random sample of division accident/injury reports by the BSO and OAK Matrix identified another employee who cut his fingers on a band saw (est. 180 days lost workdays), that would show a serious hazard existed, was not reported. For trending purposes, a better system is needed.

The number of Occurrence Reporting and Processing System (ORPS) reportable incidents is significantly lower for this performance period than in FY02. The BSO performed a trend analysis and found that 18 of the 22 ORPS for FY02 and FY03 identified inadequate procedures or not following procedures as the root cause or direct cause for the incidents. There were two significant incidents during the performance period. Both involved not following procedures and violations of standard requirements or formal authorization.

1. One incident was a laser safety event involving the Material Sciences Division work on the UC Berkeley Campus in Appendix I space. This work was performed under the Memorandum of Understanding (MOU) between the Campus and LBNL. Under this MOU the work is performed according to the campus safety requirements, but must be consistent with the LBNL requirements. An Independent Panel was convened by DOE to review the adequacy of the Laser Safety programs on the UC Berkeley campus and at LBNL. It was found that both institutions have solid safety programs, but numerous opportunities for improvement for both institutions were identified in the Review Report. A corrective action plan has been developed to address the findings. Key corrective actions include requiring additional engineering and administrative controls, training and reviews for laser usage and strengthening implementation of ISM for projects and students working on campus under LBNL funding. A new Memorandum of Understanding which is under negotiations should further strengthen the ISM implementation.
2. The other incident involved a contamination in a controlled area at the Hazardous Waste Handling Facility (HWHF) which resulted in 1 serious and 3 major RWA violations. This incident was very similar to a FY02 incident at the same facility. The incident was investigated by LBNL's Radiation Safety Committee and resulted in a suspension of the RWA at the HWHF facility at least until January 31, 2004. The root cause of the event was identified as insufficient Management Oversight the same as in the FY02 incident. Some of the corrective actions completed for the first incident were found to be ineffective.

The accident/injury performance for the period is rated at the 'Good' gradient. Four divisions Accelerator and Fusion Research Division (AFRD), Advanced Light Source (ALS), Chemical Sciences Division (CSD), and Earth Sciences Division (ESD) had no recordable or lost work time injuries. Four divisions Engineering, EH&S, Facilities, and Genomics implemented programs to manage the accident/injury rates, but the rates either increased or remained approximately the same. It is not clear why the efforts have not been effective.

The ES&H Training Program continues to effectively address safety objectives and performance goals. Numerous system enhancements were accomplished in FY03 to further improve and develop the program. The overall completion rate of the required ES&H Training remains outstanding for another year at 92%.

The environmental releases and environmental noncompliance performance was consistent with the outstanding gradients from FY02. There were no environmental violations. The radiation environmental releases, which are normally a fraction of 1% of the Environmental Release Limits, were further reduced by the decommissioning of the Tritium Labeling Facility which was the main source of release. The Laboratory has not had any wastewater discharge violations for the last five years. This record has earned the LBNL the right to renew their permit every four years instead of annually.

Overall Environmental Restoration, LBNL performed at the outstanding gradient for the three performance criteria specified in FY02 metrics which were carried over to FY03.

The main function of LBNL's Environmental Restoration Program is to complete restoration activities in accordance with RCRA requirements. LBNL completed all regulatory milestones as scheduled. All Quarterly Progress Reports were submitted on schedule. The Laboratory's Environmental Restoration Program performance in executing projects in accordance with an approved project schedule baseline was outstanding.

<b>Performance Rating (Adjectival): Outstanding</b>
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92.00%
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**Performance Measure: #1.2.d Feedback and Improvement**

Opportunities for institutional improvements are identified from the Lab's annual ES&H Self-Assessment Report. Milestones for implementing improvements shall be met.

**(Weight = 7.5%)**

**Gradients:**

Unsatisfactory	Little or no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good	Opportunities for institutional improvements are identified in the Lab's annual ES&H Self-Assessment Report. A plan of action with milestones for each improvement target has been developed.
Excellent	More than 80% of the milestones in the plan of action have been met.
Outstanding	More than 90% of the milestones in the plan of action have been met.

**Performance Narrative:**

The Laboratory has a mature Self-Assessment Program and overall it is effective. It is currently going through the DOE-Science (SC) Certification Process as a pilot. The onsite review of the Self Assessment Program concluded that a solid program is in place with some noteworthy practices. The conclusion drawn was that the program was ready for review by the DOE-HQ Certification Board.

All Division self-assessments and Integrated Functional Appraisals (IFAs) were conducted in a timely manner. All scheduled Management of Environment, Safety and Health (MESH) reviews, except for the Physics review were completed during the performance period. BSO staff participated as observers in IFAs and Division self-assessment validations. The summary of the MESH reviews were provided in the Laboratory's Self Assessment roll up Report.

The rate of completion of the Laboratory's action plan to address institutional opportunities for improvement is the central focus of this performance metric. It was verified by the BSO that 9 out of 11 milestones were completed during the performance period and not 10 as reported in the Laboratory's Appendix F Report. The opportunity for improvement involving the matrix employee policy had 3 milestones, and the first two were completed. The third milestone which required the policy to be included in the RPM and PUP-3000 was not completed. The policy was included in the RPM on November 7, 2003 which falls outside of the performance period. The policy still has not been included in PUB-3000 at the time of this evaluation. Therefore only 82% of the institutional opportunities for improvement action plans have been completed. Additionally, 85% of the divisional opportunities for improvement action plans were completed and the rate of completion of corrective actions for LCATS is at 90.7%.

**Performance Rating (Adjectival): Excellent**

**85.00%**

**Criterion: #1.3 ISM System Outcome Measures**

System outcome measures are linked to the ISM process measure. System outcomes are used to validate and drive ISM excellence. **(Weight = 30%)**

**Performance Measure: #1.3.a Routine Exposures from Routine Activities**

Occupational radiation doses to individuals (excluding accidental exposures) from DOE operations will be managed to assure that applicable 10 CFR 835 limits are not exceeded. **(Weight = 7.5%)**

**Assumptions:**

1. The performance period for this measure is from July 1, 2002 to June 30, 2003.
2. Any actual or anticipated significant changes in workloads or badged worker population (interpreted to be an increase or decrease of 10% or more) that would affect radiation doses are brought to the attention of UC and DOE, and appropriate adjustments are made.
3. Some variability is expected, which may not indicate a trend.
4. This Measure is directed toward current management and control of radioactive materials.
5. Outcome Measure reports demonstrate how results are used to drive improvement or maintain current best management practices.

**Gradients:**

Unsatisfactory	Little or no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good	No individual exposures in excess of 500 millirem without an increase in workload (unless specifically authorized in writing and approved by the Radiological Control Manager).
Excellent	Qualify for Good, plus the number of individual exposures exceeding 100 millirem is less than or equal to the control level of 10, without an increase in workload.
Outstanding	Qualify for Excellent, plus the average individual positive dose is less than the control level of 50 millirem, without an increase in workload.

**Performance Narrative:**

All gradients have been met for the **outstanding** rating. The average individual positive dose was 33 millirem, versus the control level of 50 millirem. There was one individual with a dose exceeding 100mrem, versus the control level of less than or equal to ten (10). There were no individuals who received a dose above 500 millirem.

<b>Performance Rating (Adjectival): Outstanding</b>
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95.00%
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<b>Performance Measure: #1.3.b Prevention of Unplanned Radiation Exposures</b>
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ORPS reportable occurrences of unplanned radiation exposures, skin or personal clothing contamination are managed and minimized. <span style="float: right;"><b>(Weight = 7.5%)</b></span>
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**Assumptions:**

1. For the purpose of this measure, unplanned radiation exposures are considered to be greater than 100 millirem.
2. The number of individuals contaminated is counted.
3. Some variability is expected, which may not indicate a trend.
4. Outcome Measure reports demonstrate how results are used to drive improvement or maintain current best-management practices.

**Gradients:**

Unsatisfactory	Little or no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good	The weighted number of contaminated individuals is more than 6.0 but less than or equal to 8.0.
Excellent	The weighted number of contaminated individuals is more than 4.0 but less than or equal to 6.0.
Outstanding	The weighted number of contaminated individuals is less than or equal to 4.0.

**Performance Narrative:**

All gradients have been met for the **outstanding** rating. The Laboratory had no occurrences of unplanned radiation exposures nor significant skin or personal-clothing contamination for the performance year to report in the Occurrence Reporting and Processing System (ORPS).

<b>Performance Rating (Adjectival): Outstanding</b> <span style="float: right;">97.00%</span>
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**Performance Measure: #1.3.c Control of Radioactive Material**

- Loss of control of radioactive materials is managed and minimized. **(Weight = 7.5%)**

**Assumptions:**

1. Off-normal occurrences have a weighting factor of 1, and unusual occurrences have a weighting factor of 1.5.
  2. Some variability is expected, which may not indicate a trend.
  3. This Measure is directed toward current management and control of radioactive materials.
- Outcome Measure reports demonstrate how results are used to drive improvement or maintain current best-management practices

**Gradients:**

Unsatisfactory	Little or no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good	The weighted number of occurrences is more than 4.0 but less than or equal to 6.0.
Excellent	The weighted number of occurrences is more than 2.0 but less than or equal to 4.0.
Outstanding	The weighted number of occurrences is less than or equal to 2.0.

**Performance Narrative:**

All gradients have been met for the **outstanding** rating. There was one instance of ORPS-reportable floor contamination in the reporting period, at the Off-Normal level.

<b>Performance Rating (Adjectival): Outstanding</b>	<b>93.00%</b>
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**Performance Measure: #1.3.d Accident Prevention**

The baseline period for comparison is CY 1997 data. The Lab's Severity and frequency (defined as Lost Workday Case Rate (LWC) and Total Recordable Case Rate (TRC) respectively) of accidents during the performance period will be compared to the baseline period. The number of Bureau of Labor Statistics reportable occurrences of these accidents will be tracked. A downward trend is expected as compared to the baseline year. The overall performance rating for this measure will factor in LWC and TRC rates and other accident prevention information identified below.

**(Weight = 7.5%)****Assumptions:**

1. Laboratory statistics are collected for the baseline for all Laboratory incidents, including subcontractors as reported to CAIRS.
2. For FY 2003 and future years, baseline assumptions are reviewed and, if appropriate, updated by mutual agreement between the local DOE office and the Laboratory.
3. Subcontractor operations/personnel are included for all subcontractors whose injury data are reported to CAIRS. Subcontractors are excluded if they are "servicing" the Laboratory (e.g., copy machine vendors or other transient workers).
4. The Laboratory's five-year goal for reduction of LWC and TWC is derived from the industry best-in-class Benchmarking Study completed in 1998 and in agreement with DOE.
5. Consideration is given to the Laboratory's rank for LWC and TRC within the best-in-class peer group.
6. Establishment and reporting of upper and lower control limits to determine the significance of accident rate variation (caused variation vs. random variation) are examined.
7. Consideration is given if any targeted/focused accident prevention program to a subpopulation within the Laboratory demonstrates effective intervention and/or improvement in the combined LWC and TRC score.
8. Consideration is given on demonstration of quantifiable return on investment (ROI) from implementation of accident prevention program initiatives.
9. Consideration is given to the rate of annual rate of reduction for LWC and TRC, using best in class as the benchmark and 1997 as the baseline year.
10. Overall rating of accident performance should be weighted toward higher recognition and credit for managing and reducing severity (LWC) of DOE recordable cases, due to LBNL's efforts to develop and implement multiple accident prevention initiatives early in the performance contract period. Therefore, the LWC has a weighting factor of 2 to 1 compared to the TRC.
11. If the DOE CAIRS reporting system changes during the performance year, data reported under the new system will be used after the effective date of the change. If the changes in the CAIRS system have an inequitable impact on this measure, the measure will be renegotiated at that time.

Progress toward reduction goals is evaluated using the following scoring system:

TRC between 3.00 and 2.25 = 1 point

TRC between 2.25 and 1.50 = 2 points

TRC below 1.50 = 3 points

LWC between 1.50 and 1.00 = 2 points

LWC between 1.0 and 0.50 = 4 points

LWC below 0.50 = 6 points

### Gradients:

Unsatisfactory	Little or no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good	Performance for LWC and TRC is scored and then summed. The sum for this gradient is 2 to 4 points, with consideration for demonstrated achievements identified within the list of assumptions.
Excellent	Performance for LWC and TRC is scored and then summed. The sum for this gradient is 5 to 7 points, with consideration for demonstrated achievements identified within the list of assumptions.
Outstanding	Performance for LWC and TRC is scored and then summed. The sum for this gradient is 8 or more points, with consideration for demonstrated achievements identified within the list of assumptions.

### Performance Narrative:

The Total Recordable Case Rate (TRC) rate for FY 2003 is 2.35 for a score of 1 point. The Department Audit Reporting Tracking (DART) system rate is 1.04 for a score of 2 points. The total score of 3 points sums up to a combined score of 3 points which qualifies for a gradient evaluation of **“Good”**.

Overall, both the TRC and DART increased in the fourth quarter of FY03. Four divisions Engineering, EH&S, Facilities and the Production Genome Facility- injury rates increased or remained approximately the same during the performance period. Facilities experienced the most significant increase. BSO has reviewed some the work trends in this division and have the following observations. During the fourth quarter, there was a significant workload increase due to year end projects at a time when the staffing level had been cut by 40%. The increased activity with fewer staff may have increased the risk for injury. Similarly, the ergonomic injury in ASD increased after the workload increased significantly due to external audits. Better work planning and allocation of resources may have avoided the increase in injuries.

The LBNL accident rates have been improving over time, since 1994. FY2003 is relatively flat, a leveling-off in the downward-trending statistics with an increase in the fourth quarter. This resulted in LBNL having the highest accident/injury statistics among the Science Laboratories since the other

Laboratories showed significant decreases.. The increased occurred at a time when several other DOE Laboratories showed a significant decrease. Several initiatives have been implemented by LBNL to help move the accident record downward, but have been ineffective in several divisions..

LBNL has initiated several accident prevention programs in FY2003 that have had an effect or could result in long-term improvements in the overall safety program. Prevention programs have been focused on the most troublesome accident rates of the Facilities Division. The occupational safety group has created focus teams and assigned them to Facilities projects, including small projects, to support and assist project engineers in maintaining continuous improvement in the safety programs. Major changes were made in the dig permit to identify hazards, clarify safety procedures, and assign responsibility at each stage of work. Safety personnel are assigned to work full time with groups showing rising accident trends; one focus effort in August resulted in going from 3 incidents and 4 near-misses in 2 weeks to no incidents for over a month. Improved worker protection through installing new tie-off points for fall protection and stairs and bridges over pipes and obstructions on building roofs are making positive changes in maintenance safety. The occupational safety group researched safer knives and box cutting equipment and added them to the stockroom so that Facilities can provide their workers safer cutting implements. The OS Group is providing up to date incident statistics and trend information to Division managers to help them focus on problem areas.

<b>Performance Rating (Adjectival): Good</b>
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<b>70.00%</b>
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## Performance Area: **FINANCIAL MANAGEMENT**

Lawrence Berkeley National Laboratory (LBNL) will use the Financial Management Performance Assessment Plan (FMPAM) for fiscal year 2003. The Financial Management organization will finalize its final assessment plan with DOE and UC by October 1, 2002. This plan will cover performance thresholds, performance ranges, specific scoring criteria, and frequency of reporting.

In this model, points are used to determine the score for each activity. Weights and the corresponding points are shown below at the Objective, Criteria, and Performance Measure Levels. Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity. The final rating will be based on the total activity points earned. The rating percentage will be calculated as a ratio of total points earned to total points possible (where a total weight of 100% is equal to 1,000 points).

### General Note Regarding Gradients:

All performance measures are rated as composites of numerous sub measures described in the protocol document. Points are earned for each sub measure. The sub measure points earned are totaled for each associated performance measure. The resulting performance measure score will be calculated as a percentage of total points possible. The following table illustrates the appropriate adjectival rating associated with percentage of points earned.

<u>Percent of Points Earned</u>	<u>Rating</u>
90-100%	Outstanding
80-89%	Excellent
70-79%	Good
60-69%	Marginal
59% or less	Unsatisfactory

### **Performance Objective: #1.0 Effective Accounting Practices**

The Controller's Organization shall ensure the accounting practices are effective, efficient, and according to generally accepted standards and principles. **(Weight = 14.1%)**

### **Criterion: #1.1 Cash Management**

The Controller's Organization shall have effective processes to disburse and collect government funds. **(Weight = 2.5%)**

**Performance Measure: #1.1.a Effectiveness of Disbursements**

The effectiveness of vendor payment processes will be measured.

**(Weight = 1.2%)**

**Gradients:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

Lawrence Berkeley National Laboratory (LBNL) earned a rating of 93.76% percent for effectiveness of disbursements. The goal set for number of days to process invoices was exceeded and customer satisfaction measure was met.

**Performance Rating (Adjectival): Outstanding**

93.76%

**Performance Measure: #1.1.b Effectiveness of Collections**

The improvement trends for collection of accounts receivable will be measured. **(Weight = 1.3%)**

**Gradient:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The objective of not having any uncollected accounts receivable over 160 days was met. However, the Laboratory referred one account that would have fallen in this category to DOE OAK for the Treasury offset program. Upon further analysis, DOE OAK determined that account was not appropriate for referral because it was disputed by the other party. The customer ultimately agreed to pay the account after further discussions between DOE OAK, the Laboratory, and the customer.

**Performance Rating (Adjectival): Outstanding**

95.00%

<b>Criterion:</b>	<b>#1.2 Account Management</b>
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Ensure that the Controller's Organization effectively manages high risk accounts. <b>(Weight = 11.6%)</b>
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<b>Performance Area:</b>	<b>#1.2.a Work For Others (WFO) Accounts - Use of UC Bridge Funding</b>
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The Controller's Organization shall demonstrate effective management of UC financing of WFO. <b>(Weight = 2.8%)</b>
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**Gradients:** Basis for Rating  
Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

A monthly Unbilled Work for Others Cost (Work for Others) report signed by the General Accounting Manager or Financial Services Senior Manager was submitted to DOE OAK monthly, indicating management awareness of projects being funded by University of California (UC) "bridge" funding. There were no clear trends (positive or negative) evidenced in the reports. We encourage the laboratory to make better use of the report to manage project funding.

<b>Performance Rating (Adjectival): Outstanding</b>	<b>91.00%</b>
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<b>Performance Measure: #1.2.b High Risk Account Reconciliations</b>
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The Controller's Organization shall demonstrate effective accounting processes/results for high-risk account reconciliations. <span style="float: right;"><b>(Weight = 6.4%)</b></span>
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**Gradients:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

Laboratory payroll and vendor accounts were reconciled timely each month and reconciling items were cleared within a reasonable time. However, other high risk accounts have not been consistently reconciled. The LBNL internal audit department cited the Laboratory for failure to reconcile subsidiary with General Ledger. (See narrative for measure 2.1a below) The Laboratory needs to redouble efforts to ensure reconciliations are timely, effective and well documented.

<b>Performance Rating (Adjectival): Excellent</b> <span style="float: right;">89.00%</span>
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**Performance Measure: #1.2.c Asset Management**

The Controller's Organization shall demonstrate effective accounting processes/results for asset management. **(Weight = 2.4%)**

**Gradient:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The requirements to close completed projects timely and to plan and fund institutional general plant projects appropriately were met.

Clarification: the measure and the results herein represent only current year (FY03) project closing activities. LBNL met the timeline expectations for current project closings, therefore received the above rating for the current period. However, the reader should be aware the measure as presently implemented does not take into account or reflect past performance and subsequent disclosures. Because of this and the midyear disclosure of a series of failed accounting and poor property management practices, an overall performance rating reduction will be applied to financial and laboratory management. DOE considers the effects of sufficient consequence to warrant an overall performance rating reduction in this functional area.

**Performance Rating (Adjectival): Outstanding**

95.00%

**Performance Objective: #2.0 Financial Stewardship**

The Controller's Organization practices provide for financial stewardship, including compliance, data integrity and reporting. **(Weight = 34.4%)**

**Criterion: #2.1 Financial Compliance**

The Controller's Organization shall demonstrate stewardship and compliance with DOE and federal accounting standards and policies. **(Weight = 17.6%)**

**Performance Measures: # 2.1a Audit Results and Resolution**

The Controller's Organization will be measured on the audit results and resolution of audit findings. **(Weight = 1.8%)**

**Gradient: Basis for Rating**

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

During FY 2003, the Office of Field Financial Management (OFFM) conducted a focused operational oversight awareness survey on selected LBNL financial activities. The purpose of the review was to provide reassurance that there are no further “anomalies” or material differences between what the agency has sanctioned or stipulated in policy and what occurs in-practice; that changes implemented by the Laboratory have been properly documented and appropriately approved; that indirect practices generally conform to Cost Accounting Standards (CAS); that equity in practices is evident and acceptable to DOE OAK; and whether there are overdue or outstanding actions this office or the Contracting Officer (CO) should take to remedy identified financial deficiencies. As part of that review and audit follow-up DOE OAK examined the status of actions on recommendations related to internal controls, including a review of actions taken on the Internal Audit report dated June 2000, Internal Audit Project No. 2205. DOE OAK’s review found that LBNL had been able to correct many of the findings and recommendations that were identified in the June 2000 audit report. However, there were still some open items that needed to be addressed.

Specific status of remaining open items is as follows:

- Accounts Payable

- As of June 2003, 1,967 open vouchers totaling \$904,018 remain un-reconciled, down from \$5,472,490 in July 2002.
- Plant and Equipment, Construction in Progress
  - A Construction Work in Process (CWIP) discrepancy was validated in September 1998; however, LBNL recently identified accounting cost data in the CWIP accounts without specific identification of the asset the cost was associated with. Internal Audit is conducting a separate review of this activity.
- Accrued Payroll, Payroll Taxes and Deductions
  - Reconciliation of payroll tax liability accounts as of May 2003 were not being properly performed. Small unexplained differences were noted.
  - LBNL still needs to include clearer descriptions and disposition of reconciling items
- Financial Services Operational Efficiency
  - LBNL performed a separate follow-up review of Resource Adjustment transactions (cost transfers) and found that additional attention and follow-up is still needed. Financial Management System training was prepared and LBNL required all staff to be retrained and certified.

Based on our review, the audit results and resolution practices of the laboratory are rated as good. The age of the audit report tested and the fact that a number of items still remain open is the basis for the rating in this area.

<b>Performance Rating (Adjectival): Good</b>	<b>79.00%</b>
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**Performance Measure: #2.1.b Internal Controls and Compliance on Subject Areas**

The Controller's Organization will be measured on the adequacy of their internal controls environment.

**(Weight = 3.6%)**

**Gradient:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The agreed to self assessments were performed by LBNL which is the basis for the rating. However, there is evidence that LBNL has some significant and longstanding weakness in its management control environment as demonstrated by property management discrepancies which were not detected, reconciled and attended-to timely. A failure of management controls also contributed to multiple significant improper disbursements (albeit which were subsequently recovered) and a recent external audit revealed material weakness in supporting records which is attributed to a failure to perform customary and timely reconciliation of accounts and ledgers.

Weakness and inconsistencies in "Fabrication Procedures", one of the self assessment areas, appear to be a contributing factor to the property management discrepancy. While target dates were identified and met in the self-assessment for procedure development and procedural briefings, the issue itself is a major deficiency in the internal control area. While DOE accepted the proposed assessment areas, in retrospect, we conclude the target areas did not focus on the most vulnerable financial and management control topics.

**Performance Rating (Adjectival): Good**

**79.00%**

**Performance Measure: #2.1.c Cost Accounting Practices**

The Controller's Organization compliance with Cost Accounting Standards will be measured.

**(Weight = 7.2%)**

**Gradient:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The overall FY 03 rating is good. DOE OAK understands the nature of costs included in LBNL's indirect cost pools and they are consistent with LBNL's Cost Accounting Standards (CAS) Disclosure Statement (DS) indirect pool structure. In addition, the methodologies used by LBNL to allocate the indirect costs as described in its Cost Accounting Standards Disclosure Statement are appropriate and in accordance with CAS, except for LBNL's noncompliance with its disclosed practice and with CAS 418 for the determination and disposition of material variances. This issue has been in-process for at least one prior assessment period, FY02, and is not yet resolved.

Overall, indirect rate submissions and accounting change proposals are generally submitted as required and have been in conformance with DOE requirements.

Financial Services Department/Cost Accounting has demonstrated an effective, comprehensive approach to disseminating cost accounting information to internal laboratory customers in a timely manner. The approaches used are e-mail notification, posting to web-sites, discussion and/or hard copies at Financial Network Group or individual meetings.

The outstanding issue on the determination and disposition of material variances negatively impacts the Laboratory's performance in this area.

**Performance Rating (Adjectival): Good**

**70.00%**

<b>Performance Measure: #2.1.d Accuracy of DOE Financial Statements</b>
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Demonstrate effective accounting processes/results for accuracy of DOE financial statements.
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(Weight = 5%)
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**Gradient:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The Laboratory submits timely monthly financial data to be integrated into DOE records. The data is edited by DOE OAK and the edits are cleared before each month can be closed and data accumulated in DOE's data base from which financial statements are produced. Minimum requirement to contribute to accuracy of DOE's financial statements was met. However, there is not substantive evidence that the laboratory reviews the monthly DOE trial balance. The Laboratory did not submit an analysis of FY 2003 financial statements on time as annually required and as requested by the Manager of the National Nuclear Security Agency's (NNSA) Financial Services Department.

<b>Performance Rating (Adjectival): Good</b>
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75.00%
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**Criterion: #2.2 Financial Reporting**

The Controller's Organization will demonstrate effective reporting of financial information.  
(Weight = 10.8%)

**Performance Measures: #2.2.a Internal Financial Management Reporting**

The Controller's Organization will be measured on the reporting of financial information to internal customers.  
(Weight = 3.8%)

**Gradient:** Basis for Rating  
Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The Laboratory self-assessment indicates internal reports were provided to managers timely each month.

<b>Performance Rating (Adjectival): Outstanding</b>	95.00%
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**Performance Measure: #2.2.b DOE and Other External Laboratory Reporting**

The Controller's Organization will be measured on the reporting of financial information to DOE and other external customers. **(Weight = 7%)**

**Gradient:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

First submissions of the monthly financial data to DOE OAK were on time and generally there was improvement from the beginning to the end of the fiscal year, i.e. decrease in number of edits. There were fewer edits towards the end of the year. However, for several early months substantial effort and coordination between DOE OAK and Laboratory was necessary to clear edits and complete the monthly closing. DOE OAK still must manually record transactions to completely record reimbursable work deposits. To accomplish the monthly closings lab finance staff continue to work long hours and exert extra effort.

**Performance Rating (Adjectival): Good**

79.00%

<b>Criterion:</b>	<b>#2.3 Standards and Principles</b>
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The Controller's Organization shall have documented, effective internal controls and policies and procedures. <div style="text-align: right;"><b>(Weight = 6%)</b></div>
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<b>Performance Measure:</b>	<b>#2.3.a Financial Controls</b>
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The Controller's Organization shall demonstrate the effectiveness of internal controls in primary accounting processes as identified with DOE. <div style="text-align: right;"><b>(Weight = 3%)</b></div>
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**Gradient:** Basis for Rating  
 Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The Laboratory continues to perform this measure in an **outstanding** manner. The financial controls assessed were: Work for Others (WFO) account management and the University Directed Research and Development (UCDRD).

WFO

The Laboratory Financial Services Department's (FSD) self-assessment indicates adequate segregation of duties exists between the Financial Services staff in the Financial Analysis unit that open project accounts and the General Accounting unit responsible for opening Work for Others (WFO) contracts and billing in the Financial Management System (FMS).

The applicable FMS project set-up policies are documented in desk procedures.

FSD identified the alert mechanisms as project setup validation of data and edit checks.

Computer security is maintained for Project Set-up via security tables which are password/access protected.

UCDRD

FSD's self-assessment indicated adequate segregation of duties exists among the Laboratory Directorate (authorizes use of funds), Financial Services Management (approves accounting reports) and General Accounting (prepares draw down requests, issues checks, prepares bank reconciliations and the monthly status report).

The applicable policies and procedures are contained in the DOE/UC Contract Funds manual and desk procedures.

FSD identified the alert mechanism as the review and approval process.

Computer security is maintained as part of the Laboratory Financial Management System which is password/access protected.

<b>Performance Rating (Adjectival): Outstanding</b>	<b>100.00%</b>
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**Performance Measure: #2.3.b Financial Policies and Procedures**

The consistency, accuracy, completeness, and currency of financial policies and procedures will be measured. **(Weight = 3%)**

**Gradient:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

On a technical level the measures were met for the three policy and procedure areas assessed. However, it seems clear the sample size is too narrow to broadly project overall financial performance in terms of stewardship. The dearth of essential reconciliations indicates a weakness in the application of accounting standards and principles that are intended to underscore integrity, accuracy, completeness, etc. While financial policies and procedures may indeed exist and be communicated, if they are not uniformly practiced and adhered to they become marginally useful as assertions about consistency, accuracy, completeness and currency of financial policies and procedures. This notwithstanding, the Laboratory met the technical requirements of the measure.

<b>Performance Rating (Adjectival): Excellent</b>	<b>90.00%</b>
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**Performance Objective: #3.0 External Budget Products and Services**

The Controller's Organization provides quality and appropriate budget formulation and execution products and services to external customers in support of their financial management systems, policies, and procedures. **(Weight = 21.5%)**

**Criterion: #3.1 Budget Formulation and Validation**

The Controller's Organization shall provide budget formulation and validation products and services that facilitate effective financial management and stewardship of resources. **(Weight = 5%)**

**Performance Measures: # 3.1.a DOE Budget Submission and Validation**

The Laboratory's formal DOE budget submission and validation activities will be measured for proactive-ness, timeliness, accuracy, completeness, and customer satisfaction. **(Weight = 5%)**

**Gradient:** Basis for Rating  
Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

LBNL submitted their annual FY 2005 Budget Submission on time. The Financial Services Management (FSM) used several proactive steps to ensure a quality budget submission. The annual budget formulation kick-off was presented to LBNL resource personnel to provide training and provide a forum for discussions and reviews. In addition, all of the budget materials were placed on the web for easy access. This improvement allowed for easier access by all LBNL personnel. The implementation of the Lab's web-based budget preparation and project planning database, Program Management Tracking System (PMTS) allowed for automatic generation of the Field Work Proposals (FWPs) and consolidation for a more efficient and less time consuming budget submission process.

**Performance Rating (Adjectival): Outstanding**

**95.00%**

<b>Criterion:</b>	<b>#3.2 Budget Execution and Cost Management</b>
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The Controller's Organization shall provide budget execution products and services that facilitate effective financial management and stewardship of resources. <span style="float: right;"><b>(Weight = 16.5%)</b></span>
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<b>Performance Measures: # 3.2.a Control of Funds</b>
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The Laboratory's costs and commitments are controlled within established limits. <span style="float: right;"><b>(Weight = 9%)</b></span>
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**Gradient:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

In most areas, LBNL has maintained cost and commitments within authorized funding levels (ECOR) and has the processes in place to monitor and control costs at the B&R level 9 during the entire fiscal year. No reportable violations occurred. LBNL in the last two years has initiated proactive activities and controls to improve the effectiveness of funds controls. Communication between the Controller's staff and the programmatic administrators has improved, along with increased report analysis. With the joint effort of the divisions, the Chief Financial Officer is now able to more efficiently control costs.

One area where LBNL was deficient was in Performance Measure 3.2.a.5. "Laboratory costs are within cost control levels for Reimbursable WFO funding throughout the year." In this area, Laboratory costs were within cost control levels for Reimbursable funding at year-end, however, not throughout the entire year. This has been a concern for the lab for several years and progress has been made to improve processes and address the ongoing issues. FSM expects some technological improvements in the future which would hopefully alleviate this problem.

<b>Performance Rating (Adjectival): Excellent</b>	<b>85.00%</b>
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<b>Performance Measure: #3.2.b Reports, Submissions, and Requests</b>
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The Controller's Organization's reporting of budget execution and cost management to DOE will be measured. <b>(Weight = 7.5%)</b>
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**Gradient:** Basis for Rating

Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The LBNL Functional Cost Report was submitted on time and in accordance with DOE guidelines. Financial Services Management worked closely with DOE auditors during their validation process to assist in verifying the data, ensuring accuracy and completeness prior to submission. The final report was accurate, complete, and in compliance with DOE guidelines.

The Uncosted Balance Report was submitted ahead of the deadline. It was prepared in an accurate and complete manner, in accordance with DOE guidelines.

For FY 2003, all ad-hoc and miscellaneous budget execution and cost management reports were prepared in an accurate and complete manner, in accordance with DOE guidelines. The reports contained correct and factual statements with no significant factual errors. All reports were submitted on time or early.

<b>Performance Rating (Adjectival): Outstanding</b>	<b>95.00%</b>
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**Performance Objective: #4.0 Effective Decision Support**

The Controller's Organization provides appropriate business information and intelligence, expertise, analysis, and reports and organization management that enable effective internal decision making processes and outcomes. **(Weight = 19%)**

**Criterion: #4.1 Internal Planning, Reporting, and Analyses**

The Controller's Organization shall provide effective planning, reporting, and analytical decision support to its internal customers. **(Weight = 19%)**

**Performance Measures: #4.1.a Effective Processes and Tools**

The Controller's Organization uses effective processes and tools that satisfy customer needs. **(Weight = 14.5%)**

**Gradient:** Basis for Rating  
Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

FSM took proactive steps to improve the annual Budget Review presentation. The informational forecast overview was refined and customized to provide a more value-added product, which allowed for a more efficient presentation.

FSM continues to improve the Management Report (Operating Plan) to ensure it meets the needs of Laboratory Management. The Management Report includes year-to-date costs and annual forecasts for each Division. This useful information is presented quarterly to Senior Management. Meetings are held with each Division to review the changes, provide support and to implement any changes which would enhance the system.

The Management Report is well received by the Laboratory Senior Management as a viable process and tool that allows them to make sound financial decisions. Another enhancement during the year was the integration of the Management Report onto an interactive, audio-visual CD-ROM which provides senior management an alternative to the normal paper copy of the report.

FSM continues to support Lab Management with the rate management process. Monthly analysis is completed to ensure current rates are appropriate or determine if adjustments are necessary.

The Redbook continues to be a useful resource from which key financial information can be obtained. This is available for lab resource personnel and consistently updated.

<b>Performance Rating (Adjectival): Outstanding</b>	92.00%
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<b>Performance Measure: #4.1.b Institutional Distributed/Indirect Budget and Rate Management</b>
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The Controller's Organization institutional distributed/indirect budget and rate management activities will be measured. <span style="float: right;"><b>(Weight = 4.5%)</b></span>
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**Gradient:** Basis for Rating  
Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

LBNL Senior Management approved a variance policy for determining when a rate change should be made for compliance with cost accounting standards purposes. OAK's review of the final LBNL policy suggests it is not in compliance with CAS 418 or LBNL's disclosure statement and we remain unsure how, as presently constructed, it could be implemented. A fundamental observation by OAK is the variance policy does not address the indirect cost rates on the same basis as they are calculated and applied in LBNL's financial management system. We assert a failure to apply material rate variances back to beneficial projects may constitute a violation of appropriation law and is contrary to actual job order costing principles under a cost-reimbursement type contract. In addition, we noted LBNL's policy focused only on the cost pool and changes to it, usually at an aggregated level, that had no discernible relationship to how the actual rates were calculated and applied to final cost objectives.

This issue was raised and addressed in the FY 02 performance assessment. It is not yet resolved and therefore affects the overall rating for this measure.

<b>Performance Rating (Adjectival): Good</b> <span style="float: right;">70.00%</span>
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**Performance Objective: # 5.0 Effective Financial Management Systems**

The Controller's Organization will provide proactive leadership in improving financial information systems and decision support tools, in support of DOE and Laboratory initiatives. **(Weight = 11%)**

**Criterion: #5.1 Effective Internal Systems**

The Controller's Organization will provide proactive leadership in improving financial information systems and decision support tools. **(Weight = 6%)**

**Performance Measure: # 5.1.a Evolving to Meet Technology Advances**

The Controller's Organization will demonstrate the effectiveness of the Laboratory's financial information systems and decision support tools in support of internal customer's needs. **(Weight = 6%)**

**Gradient:** Basis for Rating  
Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The laboratory submitted a Financial Systems Plan in January 2003 and a subsequent supplement indicating appropriate consideration of customers' needs and processes. However, DOE continues to be concerned about systems integration and data control. Laboratory finance has difficulty tracing and explaining transactions that flow to the DOE system. For example, when there are variances in deposits or edits concerning collections laboratory accounting does not appear completely knowledgeable about what is to be done or whose responsibility it is to resolve the issue.

<b>Performance Rating (Adjectival): Good</b>	<b>75.00%</b>
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**Criterion: #5.2 Support of DOE Initiatives**

The Controller's Organization shall provide support to DOE initiatives related to relevant DOE Councils and major financial information systems. **(Weight = 5%)**

**Performance Measure: # 5.2.a Effectiveness of Support of DOE Initiatives**

The Controller's Organization shall demonstrate the effectiveness of the Laboratory's support to DOE management and information systems initiatives. **(Weight = 5%)**

**Gradient:** Basis for Rating  
Exhibit I, LBNL Financial Management, FY 2003 Sub Measures, summarizes the activities to be measured, performance ranges, and point value for each activity.

**Performance Narrative:**

The laboratory failed to meet a key DOE deadline (Dec 02) for inserting necessary codes in select financial records in support of the DOE/SGL conversion. The lab subsequently required an additional six months to meet the minimum requirements. DOE continues to be cautiously concerned whether all preparatory steps for SGL have been fully implemented by LBNL.

A series of missteps and coordination difficulties also were observed coincident with the FY 2002 Year-End Closing which unnecessarily complicated and delayed DOE year-end account closings. DOE considers these impacts sufficiently material to warrant a *"Does Not Meet"* on this measure.

<b>Performance Rating (Adjectival):</b> <b>Marginal</b>	<b>69.00%</b>
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**EXHIBIT I**  
**LBNL FINANCIAL MANAGEMENT**  
**FY 2003 SUB MEASURE**

Note: Gauged gradients are scored based on results during the assessment year. A percentage of points, from 100% to 50%, are earned based upon these results. Below a certain performance level, zero points are earned. The summary of gauged gradients below indicate the performance levels required to earn 0%, 50%, 60%, 70%, 80%, and 90% of available points.

MEASURE	ACTIVITY	GRADIENTS	POINT VALUE
<b>1.1.a</b>	<b>Effectiveness of Disbursements</b>		<b>12</b>
1.1.a.1	Vendor payments made on time. (Gauged Gradient)	<u>Percentage of Points Earned</u> 0/50/60/70/80/90  <u>Performance Level (%)</u> ≤59.99/60.00/68.00/76.00/84.00/≥92.00	10
1.1.a.2	Customer satisfaction results.	Meets/Doesn't Meet	2
<b>1.1.b</b>	<b>Effectiveness of Collections</b>		<b>13</b>
1.1.b.1	Effective processing of receivables invoices. (Gauged Gradient)	<u>Percentage of Points Earned</u> 0/50/60/70/80/90  <u>Performance Level (Days)</u> ≥15.01/15.00/12.50/10.00/7.50/≤5.00	5
1.1.b.2	No delinquent non-federal receivables (>160 days).	Meets/Doesn't Meet	4
1.1.b.3	No delinquent federal receivables (>160 days).	Meets/Doesn't Meet	4
<b>1.2.a</b>	<b>Work For Others (WFO) Accounts – Use of UC Bridge Funding</b>		<b>28</b>
1.2.a.1	The Laboratory provides UC with timely information on UC bridge funding.	Meets/Doesn't Meet	14
1.2.a.2	The Laboratory provides DOE/OAK with timely information on UC bridge funding.	Meets/Doesn't Meet	14
<b>1.2.b</b>	<b>High Risk Account Reconciliations</b>		<b>64</b>
1.2.b.1	Payroll bank account is reconciled within 20 workdays after receipt of the Account Reconciliation Report from the bank.	Meets/Doesn't Meet	16
1.2.b.2	Payroll bank account - Controllable reconciling items over 60 days old will not exceed 25% of the total controllable reconciling items. The 60-day time period will begin from the date that the reconciliation is	Meets/Doesn't Meet	16

MEASURE	ACTIVITY	GRADIENTS	POINT VALUE
	completed.		
1.2.b.3	Vendor bank account is reconciled within 20 workdays after receipt of the Account Reconciliation Report from the bank.	Meets/Doesn't Meet	16
1.2.b.4	Vendor bank account - Controllable reconciling items over 60 days old will not exceed 25% of the total reconciling items. The 60-day time period will begin from the date that the reconciliation is completed.	Meets/Doesn't Meet	16
<b>1.2.c</b>	<b>Asset Management</b>		<b>24</b>
1.2.c.1	Upon approval from Property, capitalize all completed capital construction projects no later than the next monthly accounting period after beneficial occupancy.	Meets/Doesn't Meet	16
1.2.c.2	Financial Management participates in the Unified Project Call process, which ensures all funding determination requests are evaluated and prioritized for appropriateness. Funding is monitored for appropriate allocation and distribution.	Meets/Doesn't Meet	8
<b>2.1.a</b>	<b>Audit Results and Resolution</b>		<b>18</b>
2.1.a.1	Appropriate targeting of accepted findings. (Appropriate target dates were set for all audit findings. Points are assigned based on percentage of target dates that were met.)	<u>Percentage of Points Earned</u> 0/50/60/70/80/90/100  <u>Performance Level</u> <u>(% Target Resolution Dates Met)</u> ≤49/50/60/70/80/90/100	9
2.1.a.2	Appropriate resolution of accepted findings. (Appropriate resolution was set for all audit findings. Points are assigned based on percentage of resolution of all accepted audit findings that were met.)	<u>Percentage of Points Earned</u> 0/50/60/70/80/90/100  <u>Performance Level</u> <u>(% Target Resolution Dates Met)</u> ≤49/50/60/70/80/90/100	9
<b>2.1.b</b>	<b>Internal Controls and Compliance on Subject Areas</b>		<b>36</b>
2.1.b.1	Self-assessment reports and related documentation, as determined in conjunction with DOE/OAK. (DOE/OAK will determine if self-assessment reports and related documentation were complete.)	<u>Percentage of Points Earned</u> 0/50/60/70/80/90/100  <b>Performance Level</b> (% of Self-Assessment Reports and	18

MEASURE	ACTIVITY	GRADIENTS	POINT VALUE
		Related Documentation Requiring  <i>Additional Information</i> ≥51/50/40/30/20/10/0	
2.1.b.2	Appropriate targeting of self-assessment findings. (DOE/OAK will determine if appropriate target dates were set and met for all self-assessment findings.)	<i>Percentage of Points Earned</i> 0/50/60/70/80/90/100  <i>Performance Level</i> <i>(% of Target Resolution Dates Not Met)</i> ≥51/50/40/30/20/10/0	9
2.1.b.3	Appropriate resolution of self-assessment findings. (DOE/OAK will determine if appropriate resolution was met for all self-assessment findings.)	<i>Percentage of Points Earned</i> 0/50/60/70/80/90/100  <i>Performance Level</i> <i>(% of Target Resolution Dates Not Met)</i> ≥51/50/40/30/20/10/0	9
<b>2.1.c</b>	<b>Cost Accounting Practices</b>		<b>72</b>
2.1.c.1	Indirect rate submissions are timely, accurate, complete, and in conformance with Cost Accounting Standards (CAS), as determined by DOE/OAK.	Meets/Doesn't Meet	18
2.1.c.2	CAS change proposal submissions are timely, accurate, complete, and in conformance with the agreed upon requirements as determined by DOE/OAK.	Meets/Doesn't Meet	18
2.1.c.3	CAS Disclosure Statement is current, accurate, and complete and in conformance with the agreed upon requirements as determined by DOE/OAK.	Meets/Doesn't Meet	18
2.1.c.4	Internal customer information distribution process is in place. Information is distributed to customers on timely basis (i.e., within 10 workdays after notification of DOE/OAK approval).	Meets/Doesn't Meet	18
<b>2.1.d</b>	<b>Accuracy of DOE Financial Statements</b>		<b>50</b>
2.1.d.1	DOE balance sheet codes reconciliations.	95% = Meets	16
2.1.d.2	The Laboratory is free of material GMRA audit findings.	Meets/Doesn't Meet	16
2.1.d.3	Financial Statement reports address	Meets/Doesn't Meet	18

MEASURE	ACTIVITY	GRADIENTS	POINT VALUE
	the information requirements specified in the appropriate Federal Accounting Standard and/or DOE guidance.		
<b>2.2.a</b>	<b>Internal Financial Management Reporting</b>		<b>38</b>
2.2.a.1	Monthly and periodic financial management reports are accurate, complete and meet user needs.	Meets/Doesn't Meet	38
<b>2.2.b</b>	<b>DOE and Other External Laboratory Reporting</b>		<b>70</b>
2.2.b.1	Timeliness of MARS transmission.	Meets/Doesn't Meet (Monthly)	30
2.2.b.2	MARS reporting requirement changes implemented as required by the DOE schedule (B&R recasts, OPI codes, etc.).	95% = Meets	20
2.2.b.3	Timeliness, accuracy and completeness of periodic DOE financial reports.	95% = Meets	10
2.2.b.4	Timeliness, accuracy and completeness of ad hoc DOE financial reports.	95% = Meets	10
<b>2.3.a</b>	<b>Financial Controls</b>		<b>30</b>
2.3.a.1	WFO account management.	Meets/Doesn't Meet	15
2.3.a.2	UCDRD account management.	Meets/Doesn't Meet	15
<b>2.3.b</b>	<b>Financial Policies and Procedures</b>		<b>30</b>
2.3.b.1	Financial policies and procedures are accurate, consistent, complete, and current in areas assessed, and are available to Laboratory organizations.	<u>Percentage of Points Earned</u> 0/50/60/70/80/90/100  <u>Performance Level</u> <u>(% of Financial Policies and Procedures Accurate, Consistent, Complete and Current)</u> <u>≤49/50/60/70/80/90/100</u>	15
2.3.b.2	Changes and/or updates to financial policies and procedures are communicated in a timely manner (i.e., within 10 workdays of final publication).	Meets/Doesn't Meet	15
<b>3.1.a</b>	<b>DOE Budget Submission and Validation</b>		<b>50</b>
3.1.a.1	Proactivity and customer satisfaction. The Laboratory takes proactive steps to ensure that the DOE field budget submission and	Meets/Doesn't Meet	25

MEASURE	ACTIVITY	GRADIENTS	POINT VALUE
	validation is timely, accurate, complete, and meets DOE/OAK's needs.		
3.1.a.2	DOE Field Budget Submission. Timeliness, Accuracy, and Completeness. The Laboratory's DOE field budget submission exhibits and schedules are submitted to DOE timely, accurately and with all schedules completed as prescribed in the DOE's guidance.	Meets/Doesn't Meet	25
<b>3.2.a</b>	<b>Control of Funds</b>		<b>90</b>
3.2.a.1	Laboratory costs are within cost control levels at the end of each monthly accounting period for DOE direct funding.	Three and one half points will be awarded for each month where there are no instances of costs exceeding available funds at the cost control level.	42
3.2.a.2	The sum of the Laboratory's DOE funded costs and commitments do not exceed available funds at the B&R Obligational Control Level (OCL) at year-end.	Meets/Doesn't Meet	15
3.2.a.3	The Laboratory's Reimbursable WFO costs do not exceed available funds at the Reimbursable Work Order (RWO) Obligational Control Level (OCL) at year-end.	Meets/Doesn't Meet	15
3.2.a.4	Laboratory Costs are within cost control levels for all DOE funding - throughout the year.	Nine additional points will be awarded at year-end if no instances of costs exceeding available funds at the cost control level occurred during the entire fiscal year.	9
3.2.a.5	Laboratory costs are within cost control levels for Reimbursable WFO funding throughout the year.	Nine additional points will be awarded at year-end if no instances of costs exceeding available funds at the cost control level occurred during the entire fiscal year.	9
<b>3.2.b</b>	<b>Reports, Submissions, and Requests</b>		<b>75</b>
3.2.b.1	Functional Cost Report is timely, accurate, and complete as determined by DOE.	Meets/Doesn't Meet	25
3.2.b.2	Uncosted Balance Reports are timely, accurate, and complete as determined by DOE.	Meets/Doesn't Meet	25
3.2.b.3	Regular and ad hoc budget and cost reports are timely, accurate, and complete as determined by DOE (e.g.,	Meets/Doesn't Meet	25

MEASURE	ACTIVITY	GRADIENTS	POINT VALUE
	Statement of Costs Incurred and Claimed, Laboratory Directed Research and Development [LDRD] Report, WFO Modification Request).		
<b>4.1.a</b>	<b>Effective processes and tools</b>		<b>145</b>
4.1.a.1	Financial Management provides effective, value-added tools for quality analysis and informed decisions (e.g., Operating Plan, Institutional Forecast Summary for Director's Review, and the Institutional Plan Summary Report).	Meets/Doesn't Meet	50
4.1.a.2	Financial Management supports processes that meet the needs of the Laboratory (e.g., training, utilization of effective financial systems, rate management, and work force development).	Meets/Doesn't Meet	50
4.1.a.3	Controller's Organization cost trends compared to total Laboratory costs. (Gauged Gradient)	<u>Percentage of Points Earned</u> 0/50/60/70/80/90  <u>Performance Level (%)</u> $\geq 1.59/1.58/1.38/1.20/1.00/\leq 0.80$	45
<b>4.1.b</b>	<b>Institutional Distributed/Indirect Budget and Rate Management</b>		<b>45</b>
4.1.b.1	The Laboratory takes proactive steps to ensure that the institutional indirect budget formulation and execution submissions and periodic reports are timely, accurate, complete, and meet the needs of Laboratory Management.	Meets/Doesn't Meet	45
<b>5.1.a</b>	<b>Evolving to Meet Technology Advances</b>		<b>60</b>
5.1.a.1	Customer driven development priorities.	Meets/Doesn't Meet	12
5.1.a.2	Accuracy of data.	Meets/Doesn't Meet	12
5.1.a.3	Internal systems strategic planning.	Meets/Doesn't Meet	12
5.1.a.4	Software security.	Meets/Doesn't Meet	12
5.1.a.5	Effective use of Electronic Data Interchange (EDI) technology.	Meets/Doesn't Meet	12
<b>5.2.a</b>	<b>Effectiveness of Support of DOE Initiatives</b>		<b>50</b>
5.2.a.1	Support of Financial Management Systems Improvement Council (FMSIC) and the Business	Meets/Doesn't Meet	20

<b>MEASURE</b>	<b>ACTIVITY</b>	<b>GRADIENTS</b>	<b>POINT VALUE</b>
	Management Information System (BMIS).		
5.2.a.2	DOE satisfaction with timely FMS Plan submission.	Meets/Doesn't Meet	20
5.2.a.3	DOE satisfaction with the Laboratory's coordination and support of DOE priorities and long-term system initiatives.	Meets/Doesn't Meet	10

**Performance Area: HUMAN RESOURCES****Performance Objective: #1.0 Effectiveness of HR Operations**

Human Resources programs, services and processes support the operational needs and scientific mission of the Laboratory. **(Weight = 100%)**

**Criterion: #1.1 Certified Human Resource Management Systems**

Human Resources will design, develop and implement a certified Human Resource Management system based upon the HR Best Practices national standards using an independent third-party to validate the system. **(Weight = 100%)**

**Performance Measure: #1.1.a Certified Human Resource Management System**

The Human Resources Management system achieves certification against mutually agreed upon best practices national standards. **(Weight = 100%)**

**Assumptions:**

- 1) It is expected that to accomplish this measure will be a multiple year effort.
- 2) This objective is consistent with the HR five-year (FY03-FY07) strategic plan.
- 3) A certified HR Management System will include the following elements:
  - Requirements will be based upon the DOE Office of Science (Card) principles of Line Management Accountability, National Standards, Oversight, Contractor Accountability, Vision, and Incentives
  - Components of the certified system will consist of standards, self-assessment against the standards, certification, and peer review
  - Best practices national standards for self-assessment will be established for the following areas: Recruitment, Retention, Development, and Labor and Employee Relations
- 4) The cycle for completing this activity will consist of the following phases: Assessment, Design, Development, Implementation, and Evaluation.

**Gradients:**

Unsatisfactory	Little or no effort has been demonstrated towards the achievement of the performance measure.
Marginal	Some effort is demonstrated however results fall short of the expectations for the good gradient.
Good	Best practices national standards have been developed and a gap analysis completed for four areas under the mutually agreed-upon project plan.
Excellent	In addition to the good gradient, HR has developed a transition plan responsive to the gap analysis for two of the areas.
Outstanding	In addition to the excellent gradient, HR has developed a transition plan responsive to the gap analysis for four of the areas.

**Performance Narrative:**

Lawrence Berkeley National Laboratory (LBNL) demonstrated **Outstanding** performance in FY2003, it's first year under a single measure focused on achieving certification of the Human Resources program. The Laboratory developed for Human Resources a five-year (FY2003-FY2007) strategic plan under which certification, or accreditation, will be achieved in the categories of Recruitment, Retention, Development, and Labor and Employee Relations through the process of identifying best practices or national standards, self-assessing against those standards to create a gap analysis, developing transition plans to address gaps, and under-going review to finalize certification at the "Best Practices" level. For FY2003, the Laboratory identified six areas under each of the four categories upon which to focus its efforts:

<u>Category</u>	<u>Focus Area</u>
Recruitment	System Metrics
Retention	Compensation
Development	Performance Management (appraisal process and training needs)
Labor/Employee Relations	Work Climate (Listening Forums and Flexible Work Options Program)

Standards were identified for each of the areas – Saratoga Institute targets for metrics related to recruitment, DOE compensation standards identified in the DOE Order 350.1 and negotiated into the University of California contract for LBNL, best practices for performance management upon which the Performance Review and Development Process was based, best practices upon which the Employee Development function was established, third-party assessment of work climate, and best practices for a productive work environment. Gap analyses were conducted in five of these six areas, the only exception being the Flexible Work Options Program which is being piloted for 6 months before it's assessed on its success. Transition plans also were developed for each of these five areas, several of which have seen significant progress in implementation.

The Laboratory has met, and exceeded, the requirements of the Outstanding gradient under this measure, and is to be commended for its accomplishments, as well as its commitment to establishing a national process for Human Resources accreditation of other DOE and NNSA laboratories.

<b>Performance Rating (Adjectival): Outstanding</b>
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95.00%
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**Performance Area: INFORMATION TECHNOLOGY INFRASTRUCTURE**

**Performance Objective: #1.0 Information Technology Infrastructure**

The Laboratory provides information technology infrastructure and services by meeting customer requirements and providing a protected computing environment that serves the open scientific mission of the Laboratory.

**(Weight = 100 %)**

**Criterion: #1.1 Customer Satisfaction**

Evaluation of the degree to which the Laboratory's IM products and services meet customer requirements.

**(Weight = 50%)**

**Performance Measure: #1.1.a Level of Customer Service**

Evaluation of customer service reviews and implementation of activities toward improvement.

**(Weight = 50%)**

**Assumptions:**

- 1) Measurement deliverable: results of the customer service metrics.
- 2) The agreed to Information Management areas to be addressed by this Performance Measure:
  - ☐ CIS-Desktop Support
  - ☐ Average satisfaction overall from Help Desk ticket survey – Stable above 9.0 out of 10 or increasing
  - ☐ % of tickets with response to any survey question of 5 or lower out of 10. - Decreasing
  - ☐ % of help tickets resolved by Help desk at "first touch" - Increasing

**Gradients:**

Unsatisfactory	No results are demonstrated and little or no effort has been expended in establishing effective processes towards achievement of the performance measure.
Marginal	Results fall short of the expectations for the “good” gradient however some effort has been made to establish effective processes.
Good	A systematic approach to the measurement of customer service. Evidence of meeting commitments to customer’s requirements.
Excellent	Cost effective and/or innovative approaches to measuring customer satisfaction, customer involvement throughout life cycle of information management activities, and evidence of improvement in customer service.
Outstanding	Sustained high level of customer service.

**Performance Narrative:**

Lawrence Berkeley National Laboratory (LBNL) Information Technology Infrastructure (ITSD) consistently does an **outstanding** job sustaining a high level of customer service. In the one focus area for this performance measure, Computing Infrastructure Support Department (CIS) Desktop Support, the Laboratory has demonstrated steady improvement in the four reporting years from 1999 through 2003. There were 3,637 Laboratory customers who used the service over the period July 2002 through June 2003, generating 19,779 requests for help that resulted in a ticket. Average Help Desk customer satisfaction for this period has increased in each of the survey areas, indicating the effort to improve the level of service has been successful.

Systems that allow ITSD to measure its effectiveness have now been in place for almost five years, and the average customer survey responses continue to increase slightly (to 9.68 which is rated outstanding), the number of “bad tickets” continues to decrease (to 4.65% which is also rated outstanding), and the percent of call handled by the Help Desk increased to 65.8%.

As a result, LBNL was able to provide outstanding information technology infrastructure and services by meeting customer requirements and providing a protected computing environment that serves the open scientific mission of the Laboratory.

<b>Performance Rating (Adjectival): Outstanding</b>
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<b>97.00%</b>
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**Criterion: # 1.2 Protected Computing Environment**

Ensure that the Controller's Organization effectively manages high-risk accounts. **(Weight = 50%)**

**Performance Measure: # 1.2.a Protected Computing Environment**

Evaluation of the effectiveness of the Laboratory's Cyber Protection Program (CPP) in providing a protected computing environment by deploying cyber protection measures based on cost and risk.

**(Weight = 50%)**

**Assumptions:**

CPP develops quantifiable assessment data

CPP deploys effective countermeasures based on cost and risk using the Laboratory's Risk Assessment Model

CPP monitors damage, identifies and addresses vulnerabilities, promotes awareness and responsibilities, and informs line management.

**Gradients:**

Unsatisfactory	No results are demonstrated and little or no effort has been expended in establishing effective processes towards achievement of the performance measure.
Marginal	Results fall short of the expectations for the "good" gradient however some effort has been made to establish effective processes.
Good	A systematic approach to monitoring damage, vulnerabilities, and awareness is deployed. Evidence that monitoring data from the risk assessment model is used to inform line management of protection issues. Vulnerabilities are addressed.
Excellent	Monitoring damage, vulnerabilities, and awareness leads to the improved deployment of countermeasures that are evaluated by return on investment (ROI). Total program costs including damages are minimized. Vulnerabilities are addressed. Monitoring data is used to inform line management, to adjust protection and individual awareness, and to improve the risk assessment model.
Outstanding	Monitoring damage, vulnerabilities, and awareness of responsibility leads to the improved deployment of countermeasures that are evaluated by return on investment (ROI). ). Total program costs including damages are minimized as preventive measures are adapted to the ever-changing threat environment.

Vulnerabilities are addressed. Monitoring data is used to inform line management, to adjust protection and awareness of individual responsibility, and to improve the risk assessment model. Line management and individual staff are aware of vulnerabilities and accept residual risk. LBNL monitoring and risk assessment practices demonstrate progress toward a “validated systems” approach to performance.

### Performance Narrative:

The LBNL Cyber Protection Program (CPP) met the standard for an **outstanding** performance rating by monitoring damage, vulnerabilities, and awareness which led to an improved deployment of countermeasures progress toward a “validated systems” approach to performance. Total program costs, including damages were minimized, and monitoring data was used to inform line management, to improve the risk-assessment model.

The CPP monitors the damage, and incidents are reviewed and evaluated weekly, so that realistic costs can be attributed to the risk management process. In addition, CPP monitors vulnerabilities continuously through its intrusion detection system (BRO), and informs line management through the Computer Protection Implementation Committee (CPIC) of vulnerabilities and associated protection issues. Vulnerabilities are addressed by monitoring data to adjust protection and awareness of individual responsibility and to improve the risk-assessment model.

During the rating period, LBNL used a pilot system called Network Equipment Tracking System (NETS) to gather systems information from a variety of sources within the laboratory. NETS gathers information from within the laboratory, analyzes the information in real time, and is able to guard against attacks in a “validated system” approach.

<b>Performance Rating (Adjectival): Outstanding</b>
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94.00%
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**Performance Area:      PROCUREMENT****Performance Objective:      #1.0      Procurement Excellence**

The Laboratory will maintain a procurement system that ensures Procurement programs incorporate best practices as applicable, promote customer service, and operate in accordance with policies and procedures approved by DOE and the requirements of the Prime Contract. **(Weight = 100%)**

**Criterion:      #1.1      Assessing Degree of Excellence Achieved**

The Laboratory will document and report its performance results against established sub-measures contained in the Procurement Assessment Model (PROAM). **(Weight = 100%)**

**Performance Measure:      #1.1.a      Measuring System and Service Levels**

An overall Procurement excellence score is determined as a result of the points achieved on the PROAM. The PROAM is the management system framework that establishes and maintains a customer focus, a continuous and breakthrough process improvement culture, and an emphasis on results. **(Weight = 100%)**

**Gradients:**

<b>Points</b>	<b>Rating</b>
≥ 90 Points	Outstanding
80 – 89 Points	Excellent
70 – 79 Points	Good
60 – 69 Points	Marginal
< 60 Points	Unsatisfactory

**Performance Narrative:**

The Lawrence Berkeley National Laboratory (LBNL) continues to maintain a good program for assessing system operations, resolving system deficiencies, and implementing process improvements. Procurement is measured under Appendix F of the Prime Contract using the Procurement Performance and Assessment Model (PROAM), a jointly developed tool of the Laboratory, the University of California (UC), and the U.S. Department of Energy (DOE-OAK), to assess the operational elements relative to procurement system health, efficiency, compliance, customer service and use of best

business practices. The PROAM also serves as the reporting mechanism for the DOE-HQ Procurement Balanced Scorecard (BSC).

During FY 2003, the procurement system evaluation continued with a 36-month cycle, in accordance with the Major Site and Facility Management Contractor Purchasing Self-Assessment Balanced Scorecard. The areas reviewed for this fiscal year included: Consultant Agreements and Personal Services Agreements issued by Procurement, the Procurement Card Program, and Fabrications. With the exception of the Procurement Card Program review, the self-assessments uncovered no major system findings.

The Procurement Card Program review was first conducted by the DOE Oakland Operations Office in April of 2002. The DOE-HQ Chief Financial Officer (CFO) follow-up review of the Procurement Card occurred in January 2003. LBNL requested that they be allowed to manage the CFO and DOE-OAK findings in lieu of performing an internal assessment for this period. DOE approved this request. While the reviews did not find any instance of fraud, waste or abuse, the reviews did uncover processes and procedures that needed improvement. The Laboratory Management agreed with the recommendations and instituted a revised program with emphasis on strengthening internal controls.

LBNL Procurement, measured against the objective standards in Appendix F, earned a rating of Outstanding at 95 percent for fiscal year 2003. However, the rating was reduced from Outstanding to **Excellent** due to the Procurement Specialist not ensuring that invoices for the ESnet contract were received in accordance with contractual requirements.

<b>Performance Rating (Adjectival): Excellent</b>	85.00%
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**Performance Area: PROJECT/FACILITIES AND  
CONSTRUCTION MANAGEMENT**

The University of California, in partnership with the Department of Energy, shall plan, acquire, operate, maintain, lease, and dispose of physical assets as valuable national resources. The management of physical assets from acquisition through operations and disposition shall be an integrated and seamless process linking the various life cycle phases. Stewardship of these physical assets during all phases of their life cycle shall be accomplished in a safe and cost-effective manner to meet the DOE mission and to ensure protection of workers, the public and the environment. This management of physical assets shall incorporate industry standards, a graded approach and these performance objectives.

General Note: Plans, lists and milestones will be made a matter of record in the first month of the fiscal year. These plans, lists and milestones may be revised during the year by mutual agreement between the Laboratory and DOE Facility Functional Managers. Milestones may be weighted upon mutual agreement.

**Performance Objective: #1.0 Real Property Management**

The Laboratory will effectively manage Real Property. **(Weight = 5%)**

**Criterion: #1.1 Real Property Management**

Real property is effectively managed consistent with mission, requirements, and DOE direction. **(Weight = 5%)**

**Performance Measure: # 1.1.a Program Implementation**

Number of completed milestones/milestones scheduled for completion. **(Weight = 5%)**

**Assumptions:**

Intent is to measure the effectiveness, completeness, and timeliness of implementation of Real Property management actions. Milestones will be established in partnership with DOE and made a matter of record. Milestones may be established for Facilities Information Management System completeness, office space utilization, substandard building space conversion, real property leases, etc.

**Gradients:**

Unsatisfactory	less than 0.60
Marginal	0.60
Good	0.70
Excellent	0.80
Outstanding	0.90

**Performance Narrative:**

All established milestones for the Lawrence Berkeley National Laboratory (LBNL) concerning management or improvement of real property were completed on a timely basis for FY 2003. This justifies a rating of **Outstanding**.

The milestones included production of the annual Facilities Information Management System (FIMS) Quality Assurance Plan, along with verification of population and accuracy of the LBNL portion of the FIMS database, reconciliation between FIMS and the Management Analysis and Reporting System (MARS), annual updating and validation of the Active Facilities Data Collection System (AFDCS), optimizing of LBNL office and laboratory space utilization, production of a suitability report for all LBNL buildings, eliminate or develop and convert substandard building space, and completion of the Secretarial Waiver requirement for space banking of the Laboratory for Energy-Related Health Research (LEHR) facility against near term building needs for nano-technology construction.

In the area of FIMS, LBNL has been working closely with DOE HQ to design necessary data fields to reflect a more accurate physical condition of laboratories. This included the addition of three new data fields: the Conventional Facility Indicator; Modernization Planning Indicator; and the Rehab and Improvement Cost. LBNL also authored a Conditional Suitability Assessment Model which has been placed into FIMS, addressing suitability issues under the building condition, as well as actively involved in defining new building types for the FIMS database. Data queries have shown that LBNL maintains 100 percent data population along with corresponding accuracy. LBNL has put forth significant effort to review and revise their Replacement Plant Value's (RPV) to insure accuracy for the maintenance dollars that have been, or should be expended.

As programs expand, demise, or arrive at LBNL, Space Planning continuously works to reconfigure or relocate laboratory personnel. Over-crowding continues to be a serious concern, as well as the rehabilitation or demolition of substandard excess space. For FY 2003, there was approximately 17,335 square feet of space renovated, 2,069 square feet of space demolished (FY04 estimate is for 46,274 square feet), with office utilization now standing at 106 square foot per person (General Service Administration standard is 135 square foot per person). Expansion plans were developed to meet the growing needs of the Joint Genome Institute (JGI), located off-site in Walnut Creek.

Leasing efforts continue to be focused on existing program expansions. Several off-site locations were reviewed but eventually turned down when program requirements changed during landlord negotiations. The JGI space requirement was negotiated and executed in a timely fashion. Planning

and siting for building 49 (a University of California/Developer alternate financing project) with likely DOE leasing at occupancy, continues with UC Regent project approval for both Building 49, as well as the Molecular Foundry.

<b>Performance Rating (Adjectival): Outstanding</b>
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96.00%
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**Performance Objective: #2.0 Physical Assets Planning**

The Comprehensive Integrated Planning Process should reflect current and future Laboratory needs.  
(Weight = 14%)

**Criterion: #2.1 Comprehensive Integrated Planning Process**

The Laboratory develops, documents, and maintains a comprehensive integrated planning process that is aligned with DOE mission needs.  
(Weight = 14%)

**Performance Measure: #2.1.a Effectiveness of Planning Process**

Assess how the planning process is implemented to achieve maximum effectiveness in anticipating and articulating DOE and Laboratory needs.  
(Weight = 14%)

**Assumptions:**

The Laboratory will work with DOE counterparts in a cooperative effort to continuously evaluate the effectiveness of the comprehensive integrated planning process through the development of Laboratory specific planning elements/milestones. Site specific planning elements/milestones will be made a matter of record.

**Gradients:**

Unsatisfactory	less than 0.60
Marginal	0.60
Good	0.70
Excellent	0.80
Outstanding	0.90

**Performance Narrative:**

Lawrence Berkeley National Laboratory (LBNL) activities in the area of Comprehensive Integrated Planning (CIP) is rated as **Outstanding** for FY 2003. LBNL continues to be a leader in the field of planning for the Department of Energy (DOE) Office of Science (SC) community. Continuing its effective physical asset and land use planning will assure the LBNL's value to SC, and to the scientific community. This evaluation utilized the FY 2003 Appendix F Performance Objectives, Criteria and

Measures (POCM), the FY 2003 work plan and its associated milestones, operational awareness activities and the LBNL and University of California Office of the President (UCOP) self-assessments.

LBNL's Facilities Planning Office identified five major objectives to be included in the FY 2003 Performance Objectives Criteria Measures (POCMs) for Physical Assets Planning: 1) Site and Long Range Planning (LRDP); 2) Space Planning; 3) Project Planning; 4) Environmental Planning, and; 5) Communications. A work plan (milestones) consisting of categories, milestone identification, goals, deliverables and due dates, was developed for each objective designed to measure performance, progress and improvements. The original work plan identified sixteen milestones that were linked to an objective. The work plan represented the most significant activities under the responsibility of the LBNL Facilities Planning Office.

All milestones were completed on time and all on-going/progress activities were satisfied. Accomplishments, with respect to the work plan, include: continuing the preparation and coordination activities to update the Long Range Development Plan (LRDP) with the University of California, historical resources consultants, Environmental Safety & Health (ES&H) management and Programs; Revising the Strategic Facilities Plan for LBNL; Preparing siting proposals for the User Support Facility; Developing strategies for third-party financed buildings (Five Year Capital Assets Plan (draft)); Assuring compliance of the National Environmental Policy Act (NEPA) and the California Environmental Quality Act (CEQA); Developing scenarios for possible Programmatic growth, and; Improving communications between Facilities Planning and the LBNL community. DOE validated and verified each milestone through quarterly meetings, objective evidence (status reports prepared by LBNL) and operational awareness activities.

Over the course of this review cycle, LBNL addressed many activities/issues that were not identified on the work plan despite its detail and level of effort. Significant issues that were not linked to the work plan were identified via operational awareness as a result of quarterly meetings, visits to LBNL and periodic participation at the Facilities Planning Office weekly meetings. Significant activities include acquiring appropriate excess property in order to proceed with the Molecular Foundry and User Support Facilities, preparing for the decommissioning and decontamination (D&D) of the historic Bevalac Facility, environmental planning for the Molecular Foundry (Environmental Assessment) and the B49 Project (formerly B50X-Environmental Impact Report), supporting activities to successfully obtain Critical Decision-0 (Mission Need) for User Support Facility, various siting studies and analyses (e.g., Linac-based Ultrafast X-ray (LUX) Facility in the Old Town area), preparation of a white paper for alternative financing for the SC complex, planning strategies for the proposed User Lodging Facility, options and viability for relocating the National Energy Research Scientific Computing (NERSC) Project back on the LBNL site, and support of D&D activities for the External Particle Beam Hall. For LBNL to continually address significant issues presented to them is a testament to their effective utilization of their staff and their core competencies. It should be noted that an independent evaluation of LBNL's Facilities Planning Office (in FY 2002) was critical of their communications with other LBNL entities, especially during space relocation activities. LBNL addressed this issue by assigning several milestones in the FY 2003 work plan. While a follow-up analysis has not been conducted to assess progress, DOE believes that activities conducted through the FY 2003 work plan will adequately address this deficiency.

In FY 2003, the LBNL Facilities Planning Office continued to execute both the intent and spirit of performance based management and continues to remain committed towards its success. The method currently utilized for instituting the Appendix F POCM and evaluation processes remains viable. Quarterly reporting and operational awareness meetings need to continue to assure the implementation

of the work plan, to assure process improvements occur, to effectively change or revise goals/milestones when appropriate and to assure effective asset and land use planning.

<b>Performance Rating (Adjectival): Outstanding</b>
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94.00%
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**Performance Objective: #3.0 Project Management**

The Laboratory will complete construction projects within approved budgets, schedules and scopes.  
(Weight = 33%)

**Criterion: #3.1 Construction Project Performance**

Construction projects greater than \$500K (regardless of type of funds) achieve project performance objectives.  
(Weight = 33%)

**Performance Measure: # 3.1.a Work Performed**

Number of objectives completed/number of objectives planned for completion. (Weight = 33%)

**Assumptions:**

The intent is to measure actual progress against that planned for the fiscal year and for the Laboratory to execute projects and cost project funds in a timely manner. An objective list for all active projects will be negotiated with DOE and made a matter of record. Only meaningful objectives will be listed, but each active project will have at least one objective per year. By mutual agreement between the Laboratory and DOE, objectives may be weighted for project significance, for project size/cost, for late/early completion, for improved/diminished scope, etc. Negotiated objectives are not to be interpreted as baseline change approval.

**Gradients:**

Unsatisfactory	less than 0.70
Marginal	0.70
Good	0.80
Excellent	0.90
Outstanding	1.00

### Performance Narrative:

LBNL's performance in this area is rated as **Outstanding** for FY 2003, compared to Excellent in the previous year. Originally, twenty milestones were selected to measure the performance against baselines for construction projects greater than \$500,000. Milestones for the following three Line Item projects and seven General Plant Projects (GPP's) respectively, were used:

1. B70A Wet and Culture Lab Modifications
2. B77 Phase II Rehabilitation
3. Radio Communications System Upgrade
4. B64 Add Lab/Office Space
5. B58A Expansion
6. Sitewide Water Distribution Upgrade
7. B74 Seismic Upgrade
8. B943 Oakland Scientific Facility Computer Room Build-out
9. B6 Southside Expansion and Sector 4 Addition
10. User Support Building

Five milestones were deleted from the original list of twenty. They were as follows:

1. The milestone "Issue Notice to Proceed to the Architect/Engineer for Title I Design" for the B77 Phase II Rehabilitation project was deleted because the Lab had to reevaluate the future use and configuration of B77.
2. The milestone "Completion Radio Equipment Installation/commissioning" for the Radio Communications System Upgrade project was cancelled because the funding for the leasing of radio equipment was delayed to FY 2004.
3. The milestone "Issue notice to proceed to contractor" for the B64 Add Lab/Office space was deleted because the funding for construction was delayed to FY 2004.
4. The milestone "Complete Title II design for building extension" for the B58A Expansion project was deleted because the project was cancelled.
5. The milestone "Issue notice to proceed for construction of building for the B58A Expansion project was deleted because the project was cancelled.

Therefore, LBNL met fifteen (15) out of fifteen (15) milestones. Project milestones completed on schedule / Project milestones scheduled for completion =  $15/15 = 1.00$ . A rating of 95 percent is justified for this performance measure.

Some notable achievements and accomplishments for Facilities Project Management Group (PMG) in FY 2003 are as follows:

- Sitewide Water Distribution Upgrade project – Under difficult sub-contractors relationship problems, the PMG was able to turn around this line item project from an 11 percent behind in actual work completed in October 2002, to a 1% ahead in actual work completed in September 2003.

- Oakland Scientific Facility Computer Room Build out project – The lab successfully completed this project in January 2003 ahead of schedule and under cost.
- Nuclear Magnetic Research (NMR) facility project – Under schedule constraints and multiple technical challenges, the PMG was able to engineer and construct a facility to support the NMR program in Building 31.

LBNL maintains its proactive approach to project management. Communication and teamwork between the Laboratory and DOE continues to be exceptional.

<b>Performance Rating (Adjectival): Outstanding</b>
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95.00%
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**Performance Objective: #4.0 Maintenance**

The Laboratory will maintain capital assets to ensure reliable operations in a safe and cost-effective manner. **(Weight = 33%)**

**Criterion: #4.1 Facility Management**

Facility operations and maintenance are effectively managed consistent with mission, risks, and costs. **(Weight = 33%)**

**Performance Measure: #4.1.a Program Implementation**

Sum of completion percentages for all milestones worked/milestones scheduled for completion. **(Weight = 33%)**

**Assumptions:**

Intent is to measure the effectiveness and timeliness of the Laboratory's facility maintenance program. A list of mutually agreed milestones will be made a matter of record. Milestones will be established for internal performance indicators using Energy Facility Contractors Group (EFCOG) benchmarking elements, operational awareness activities, annual maintenance summary report and others as mutually agreed.

**Gradients:**

Unsatisfactory	less than 60%
Marginal	60%
Good	70%
Excellent	80%
Outstanding	90%

**Performance Narrative:**

LBNL's FY 2003 performance for facility maintenance is rated as **Outstanding**. The Laboratory's facilities maintenance plan specified twenty-three milestones. All of these were accomplished.

**FY-2003 Maintenance Milestones**

Milestone Number	Description		
1	Complete FY02 By-Bldg. Maintenance Actuals Report		
2	Complete FY02 By-Bldg. & Site Deferred Maintenance Report		
3	Complete FY03 Annual & 5-yr. Maintenance Projects Plan		
4	Complete FY03 Beginning Backlog Projects Reconciliation List		
5	Complete Updated 5-yr. Property Inspection Plan		
6	<b>Perform Quarterly Internal Maintenance Benchmarking</b>		
7	Develop and Implement New Building Cost Report for Monthly/Yearly Assessment of Cost Breakdown (PM/CM/EM Work Types, Crafts, and Utility Costs) by Square Feet by Building Category.		
8	Complete Property Inspection Outsource Requisition		
9	Complete FY03 By-Bldg Maintenance Requirements Report		
10	Complete FY02 LBNL Annual Maintenance Executive Summary Plan		
11	Perform Quarterly Internal Maintenance Benchmarking		
12	Complete Implementation of PM program for Main Building Damper Systems		
13	Complete Property Outsource Inspection		
14	Schedule/complete DOE/OAK informal operation awareness site visit of maintenance program activity		
15	Perform Quarterly Internal Maintenance Benchmarking		
16	Complete Property Outsource Inspection Report		
17	Complete Property Inspection Summary Report		
18	Complete Backlog Summary Report		
19	Perform Quarterly Internal Maintenance Benchmarking		
20	Complete enhancements/modifications to MAXIMO Safety Pilot Project		
21	Develop Fire Damper PM Plan		
22	Develop Lab Painting Standard Plan		
23	Develop Work Order Mobile Solution Plan		

During FY 2003, LBNL's facilities management team continued to focus on improving maintenance procedures and practices. Several notable accomplishments are highlighted. Those include updating the Five Year Property Inspection Plan, enhancements to the New Building Cost Report, implementation of a more structured preventive maintenance program for main building damper systems, and improvements to the Annual Maintenance Executive Summary Plan. In addition, the final phase of condition assessment inspections was completed in FY 2003. These condition

inspections identify and prioritize capital repair projects. Another notable accomplishment was completion of enhancements to the MAXIMO software related to the Laboratory's Safety Pilot Project. This effort was so successfully applied at LBNL that the software developer has requested that Laboratory enhancements be included in the next MAXIMO software update.

The facilities team continues to aggressively select milestones which improve overall effectiveness of building operations. A performance rating of 95 percent is justified.

<b>Performance Rating (Adjectival):</b>	<b>Outstanding</b>	95.00%
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**Performance Objective: #5.0 Utilities/Energy Conservation**

The Laboratory will maintain a reliable utility system and conserve energy. **(Weight = 15%)**

**Criterion: #5.1 Energy Management**

Energy initiatives are managed consistent with a comprehensive energy management plan. **(Weight = 15%)**

**Performance Measure: #5.1.a Energy Goals**

Energy goals accomplished/goals scheduled to be accomplished in accordance with the plan. **(Weight = 15%)**

**Assumption:**

The energy management plan will be made a matter of record.

**Gradients:**

Unsatisfactory	less than 0.60
Marginal	0.60
Good	0.70
Excellent	0.80
Outstanding	0.90

**Performance Narrative:**

LBNL's FY 2003 performance for Energy Management is rated as **Outstanding**. LBNL's Energy Management Plan included twenty goals. All of these goals were accomplished.

Goal No.	Goal Category	Goal	Deliverable
1	The reduction in buildings Btu/GSF expressed as a percent of FY-1990 usage.	Review Laboratory and Process Load definitions, make changes to FIMS as appropriate, and report buildings' energy usage and GSF to DOE quarterly through Energy Management System (EMS-4).	EMS-4 Reports.
2	Implementing water-efficiency programs and plans.	Develop and submit FY-2003 Retrofit Project Abstract and Model Program proposals to DOE/Departmental Energy Management Program (DEMP) for water efficiency projects.	Copy of the proposals.
3	Annual progress of at least 10 percent toward completing energy and water audits of all facilities.	Complete at least one energy or water audit.	Summary report showing Berkeley Lab facilities, square footage, and status of studies in each. Study report.
4	Progress toward installing all cost-effective energy and water-efficiency measures by January 2005.	Complete at least one energy or water retrofit.	Project report(s) documenting the expense of project funding and the results.
5	Annual progress toward qualifying buildings for the Energy Star® Building label.	Selection, data gathering, and calculation of Energy Star® Building qualification for at least one building.	Copy of Energy Star label screening tool results and application, if qualified.
6	Application of sustainable design principles to new buildings.	Produce a report for the Molecular Foundry showing compliance with California Title 24 energy-efficiency requirements.	Copy of the report.
7	Application of sustainable design principles to new buildings.	Produce a report for the Molecular Foundry, using the Leadership in Energy and Environmental Design (LEED) rating system as a basis for evaluation, stating which sustainable design elements will be included in the design or are recommended for inclusion in the design based on cost/benefit.	Copy of the report.
8	Selection of DOE/Environmental Protection Agency (EPA) Energy Star® products.	Distribute Federal Energy Management Program (FEMP) procurement guidelines and product recommendations to Programmatic specifiers of equipment.	Records of materials distributed.

Goal No.	Goal Category	Goal	Deliverable
9	Identify low-cost energy conservation deficiencies.	Review FY-2002 Property Inspection Report and summarize the low-cost energy conservation deficiencies identified.	Summary report of low-cost energy conservation deficiencies identified.
10	Minimization of the use of petroleum-based fuels by switching to natural gas.	Develop and submit a FY-2002 Model Program Project proposal to evaluate options for employing compressed natural gas (CNG) vehicles at Berkeley Lab.	Copy of the proposal.
11	Increased use of alternative funding mechanisms.	Apply for all rebates, grants, and other financial incentives applicable to Berkeley Lab facilities projects, if any.	Copies of applications.
12	Increased use of alternative funding mechanisms.	Provide technical support services to Federal Energy Management Program (FEMP) and other federal agencies.	Summary report of franchising activities.
13	Energy management training.	Provide a total of five person-days of energy-efficiency, water-conservation, or utilities-analysis training.	Records of class attendance.
14	Increased use of on-site renewable energy generation systems.	Develop and submit a FY-2003 Retrofit Project proposal abstract to DOE DEMP for a photovoltaic power station pilot project.	Copy of the proposal abstract.
15	Control loads to minimize utility costs.	Continue the conversion of the Barrington Energy Management Control System (EMCS) to the JCI Metasys.	Project technical and financial documents.
16	Control loads to mitigate the impact of disruptions in the supply of energy.	Issue lab-wide e-mails to reduce electrical loads during supply deficiency Level 1, 2, or 3 Warnings.	Copies of e-mails distributed.
17	Control loads to mitigate the impact of disruptions in the supply of energy.	Update the LBNL emergency conservation plan, including detailed plans to operate the 2 mW generator during electrical supply deficiency occurrences.	Copy of the plan.
18	Performance evaluations and employee incentive programs.	Include the minimization of utilities cost and consumption in applicable employee position descriptions, and reward exceptional performance.	Copies of position descriptions, awards program data, and any nominations.
19	Outreach programs to motivate employees to become more efficient in their use of energy.	Energy Awareness Month activities including e-mail memos, distribution of posters, and the displaying of banners. Holiday Shutdown activities including suggestions for employee action.	Copies of applicable publications and photographs. Copies of request for employee cooperation and estimate of savings.
20	Maintain reliable electrical utility service.	Total number of customer hours of electric service less the number of customer hours of unplanned outages/total customer hours will be at least 99.982%. See Note 1.	Copy of calculation.

Two notable FY 2003 achievements were the high reliability of Laboratory-wide electrical service and the application of sustainable design principles to the Molecular Foundry. This new building design far exceeds federal and state energy efficiency requirements.

In addition, the Laboratory has committed to achieving at least the Certified Level of Leadership in Energy and Environmental Design (LEED) criteria for the Molecular Foundry. The project was registered with the U.S. Green Building Council, and requisite sustainable design strategies have been chosen. The design also calls for application of LBNL-developed “Laboratories for the 21<sup>st</sup> Century” criteria for determining building systems and strategies for a sustainable, high performance, low-energy consuming laboratory/office building.

Another notable achievement is the continued reliability of the Laboratory’s high voltage electrical system. The number of unplanned customer-hour outages was reduced to only 265, compared to the prior year’s 15,810 hours. Using an industry accepted measure LBNL attained a reliability factor of 99.9998 percent.

<b>Performance Rating (Adjectival): Outstanding</b>
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95.00%
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**Performance Area:      PROPERTY MANAGEMENT****Performance Objective:      #1.0      Personal Property Excellence**

The Laboratory will maintain a personal property system that ensures Property programs incorporate best practices as applicable, promotes customer service, and operates in accordance with policies and procedures approved by DOE and the requirements of the Prime Contract.

**(Weight = 100 %)**

**Criterion:                              #1.1      Assessing Degree of Excellence Achieved**

The Laboratory documents and reports its performance results against established sub-measures contained in the Personal Property Assessment Model (PPAM), and will collaborate with other SC Laboratories in searching for the availability of property best practices and nationally recognized standards for adoption into Laboratory property operations.

**(Weight = 100%)**

**Performance Measure:      #1.1.a      Measuring System and Service Levels**

An overall score will be used to determine the approval status of the Laboratory Personal Property Management System. The score is based on points achieved against the established sub-measures in the PPAM. The PPAM provides the management system framework that establishes and maintains a customer focus, a continuous and breakthrough process improvement culture, and an emphasis on results.

**(Weight = 90%)**

**Gradients:**

<b>Points</b>	<b>Rating</b>
>=475 Points	Outstanding
>=450 Points	Excellent
>= 400 Points	Good
>= 352 Points	Marginal
<352 Points	Unsatisfactory

## Performance Narrative:

In February, 2003, Lawrence Berkeley National Laboratory's (LBNL) Personal Property Manager informed the National Nuclear Security Administration's (NNSA) Service Center's Organizational Property Management Officer (OPMO) that 39 control accounts, with an aggregate value of \$ 76 M, were included in the personal property database as equipment, but that individual identifiable assets did not exist. The Laboratory's Property Manager was advised to set up a meeting with the (LBNL) Financial Officer to determine what steps were necessary to remove the control accounts from the personal property database.

A thorough review of the control accounts determined that between 1987 and 1998, LBNL year-end financial closing practices resulted in Property Accounting closing Work in Process accounts to completed asset accounts, even though such entries were premature.

Through a lapse in management of the year-end practice, the inappropriate closing entries were not, in all cases, reversed in the subsequent accounting period. In 1998, the personal property subsidiary accounts were transferred into the Laboratory's new personal property database, Sunflower Assets, without being thoroughly analyzed. The transfer included the 39 control accounts with an aggregate value of \$ 76 M for which a corresponding physical asset did not exist. The accounts were left dormant in the property database until their existence was reported to NNSA in February 2003.

During physical inventories of the Laboratory's assets between fiscal years 1987 and 2001, the 39 control accounts were excluded from the total population of assets and, therefore, did not have a significant impact on the outcome of the inventory in terms of percentage find results. The fact, however, that LBNL Personal Property Management had knowledge of the 39 control accounts and did not aggressively pursue having the accounts removed represents a failure in their management responsibilities.

During FY 2002, LBNL could not exclude the 39 control accounts from the asset population for the annual inventory in order to process accurate physical count sheets. Property management recorded the 39 control accounts as accounted for even though they were not touched during the inventory process. The fact that the Laboratory did not rectify the issue with the accounts prior to conducting and reporting the inventory results represents an unacceptable lapse in managerial judgment by representing the inventory results as being both objective and accurate.

The performance metrics in place for FY 2003 assess overall systemic performance and do not provide a venue for addressing such an extraordinary issue as the 39 unidentified control accounts appearing in the personal property database. Even though the entries were originally made by Property Accounting, Property Management has a singular, unshared responsibility for the accuracy of the content of the personal property management database, and for the integrity of the annual inventories conducted to assure control of the Laboratory's assets.

It is determined that Property Management's lack of action to take timely steps to remove the 39 control accounts from the personal property database and the inaccurate reporting of the inventory findings during FY 2002 be reflected in the FY 2003 performance rating by reducing the earned adjectival rating by a decrement of one rating. Therefore, the Laboratory's earned rating for the Personal Property function for FY 2003 is reduced from **Outstanding** to **Excellent**.

During FY2003, LBNL Property Management conducted a statistical sample of both "sensitive" property and equipment. A sample was drawn to yield a 99.9 percent confidence level which resulted

in populations of 1,726 sensitive items valued at \$7,196,027, and 1,640 items of equipment valued at \$68,600,538. From these populations, 99.8 percent of sensitive items and 99.8 percent of equipment items were accounted for. The National Nuclear Security Administration – Oakland (NNSA-OAK) OPMO and a representative of the Berkeley Site Office participated in a follow-up inventory validation during which all selected items were located. In addition, all precious metals were accounted-for by the Laboratory with no unexplained losses.

LBNL also scored high in system performance indicators such as: percent of new assets tagged in receiving (98 percent), percent of new assets field-tagged within 15-days (90.6 percent), accurate custodian assignment (91.5 percent), and custodians assigned within 60-days (99.8 percent).

During FY2003, the LBNL motor vehicle program achieved 105 percent utilization for Discretionary vehicles, and 111 percent utilization for Essential vehicles. In addition, during FY2003, the LBNL fleet met the Secretary of Energy's mandated motor vehicle reduction goals.

During FY2003, LBNL Property Management assessed database accuracy by verifying the identifying data elements. Property numbers, Nomenclatures (description), Manufacturer, Model Number, and Serial Numbers were checked for accuracy by comparing the existing database information to identifying information affixed to property items. LBNL plans to expand the scope of this effort in the future.

<b>Performance Rating (Adjectival):</b> <b>Excellent</b>	86.00%
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**Performance Measure: # 1.1.b Introducing Best Business Practices to Improve Performance**

The Laboratory will collaborate with other DOE/SC Laboratories in studying, identifying, and documenting property best practices for potential adoption at DOE/SC sites. All SC Laboratories will be encouraged to participate in this activity by providing baseline information and by assisting in the research of non-DOE Property Systems and the assessment of their applicability. Included in this effort will be a review of other SC Laboratory property practices and procedures with the objective of developing a suite of validated SC Property System elements. The elements will be based on recognized or developed standards and accepted or developed practices. **(Weight = 10%)**

**Gradients:**

- Unsatisfactory: Little or no effort has been demonstrated towards the achievement of the performance measure.
- Marginal: Some effort was demonstrated; however, results fell short of the expectations for a “Good” rating.
- Good: The Laboratory contacted all SC Laboratories to collaborate in studying, identifying, and documenting property best practices for potential adoption at DOE/SC sites. A substantial amount of other SC Laboratory property practices and procedures were reviewed.
- Excellent: The criterion for a “Good” rating has been met. In addition, new practices have been identified for possible implementation at the Laboratory.
- Outstanding: The criterion for an “Excellent” rating has been met. In addition, new practices have been identified and some have been implemented at the Laboratory.

**Performance Narrative:**

For this measure LBNL Property Management took the lead in collaborating with nine other Office of Science (SC) laboratories in an effort to identify and document best practices for potential implementation at other SC laboratories, or, at a minimum, at LBNL. Based on the documentation provided by LBNL, it is apparent there were a number issues/practices discussed among the laboratories, such as: sensitive item policies, property transfers, and custodial accountability for property.

From this process, five practices were identified for recommendation to SC for implementation. Of those five, LBNL Property Management has recommended that the Lab formally implement a policy whereby employees are graded for their stewardship of Government property during their performance appraisals. Some LBNL Divisions have already adopted this policy.

Based on the above referenced scoring chart, NNSA-OAK gives LBNL a score of **Excellent** at the mid-point.

<b>Performance Rating</b> (Adjectival): <b>Excellent</b>	86.00%
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BACK OF PERFORMANCE NARRATIVE

## **Report Methodology and Scoring Tables**



## Report Methodology

### OBJECTIVE STANDARDS OF PERFORMANCE

This Annual Performance Evaluation and Appraisal Report is the Department of Energy (DOE) Contracting Officer's Fiscal Year 2003 written assessment of the Contractor's performance at the Lawrence Berkeley National Laboratory. It is based upon the DOE appraisal program and the Contracting Officer's evaluation of the Contractor's Self-Assessment. The Contractor and DOE have agreed to use a performance-based management system for oversight at the Laboratory (Contract Clause 2.6, Performance Based Management.) Annual Objective Standards of Performance under the contract, Appendix F, are used for the appraisal and evaluation of work under contract and is supported by a system that includes: (1) the utilization of self-assessment and integrated oversight methodologies, systems, and processes to enhance operational efficiency and performance effectiveness, (2) the use of peer review and self-assessment in the appraisal and evaluation of science and technology/programmatic performance and, (3) such other administrative processes and procedures as the Parties may mutually agree to, from time to time, as they deem necessary to effect the intent of Contract Clause 2.6 and Appendix-F. Self-assessments are the principal means by which the Contractor evaluates compliance with the performance objectives described in Appendix F. DOE Oakland Operations Office (OAK) and the DOE Berkeley Site Office (BSO) validate the self-assessment and evaluate the Contractor's performance. The validation effort is conducted by teams responsible for the various functional areas represented in Appendix F. These teams, with guidance from DOE OAK, BSO and DOE management, are responsible for developing an adequate, independent basis for assessing the quality, credibility, and accuracy of the Contractor's self-assessment; and a basis for DOE's written assessment and evaluation of the Contractor's performance.

This Appraisal Report meets the following contract requirements:

- Provide a summary of the results from the conduct of the DOE OAK validation program and evaluation of performance of work under contract as required by Clause 2.6.
- Provide a written assessment of the Contractor's performance under the contract based upon the DOE OAK appraisal program and the Contracting Officer's evaluation of the Contractor's self-assessment as required by Clause 2.6(e).
- Provide the basis for determination of the Contractor's Program Performance Fee, as required by Clause 5.3.

### 1. Components of Laboratory Evaluation Process

The first component of the performance evaluation process is the evaluation of Science and Technology/Programmatic performance. The University of California President's Council on the National Laboratories performs a comprehensive and balanced Peer Review and evaluates the quality of science and technology at the Laboratory. The Council prepares a report that the University's

Laboratory Affairs Office uses to develop an adjectival and numeric rating for the evaluation of Science and Technology at the Laboratory. DOE Headquarters (DOE HQ) program managers and their DOE OAK counterparts validate the Science and Technology self-assessment.

The second component of the performance evaluation process is the annual Contractor Self-Assessment of the operations and administrative systems at LBNL included in Section C of Appendix F. The results of this Self-Assessment and proposed corrective action plans are then presented to the University of California, Laboratory Administration Office (UCLAO) by the Laboratory. This becomes the foundation for the Contractor's Self-Assessment.

UCLAO management also evaluates the administrative systems for the Laboratory using the self-assessments and corrective action plans provided by the Laboratory and the established Appendix F performance measures. UCLAO establishes an aggregate "rating" for the Laboratory based on the evaluation of each functional area and combines this result with the ratings for Science and Technology for a total adjectival and numeric rating.

DOE OAK reviews and validates Contractor performance against the established Appendix F performance objectives, the UCLAO rating of the Laboratory Self-Assessment, and corrective action plans. This effort is accomplished by teams reflecting expertise in the various functional disciplines required by the Appendix F administrative and operational systems. All teams have the opportunity to observe the Laboratory's independent evaluation of its self-assessment. This report is the product of their review and validation of the Contractor's performance. The primary objective of this report is to provide the annual Contracting Officer's written assessment of the Contractor's contract performance and results.

## **2. Self-Assessment Period**

Designed to capture performance for Fiscal Year 2003, the self-assessment period for the Laboratory is October 1, 2002 through September 30, 2003, unless specified in the Performance Objective. Significant performance between the later date and the end of the Fiscal Year is to be assessed by the Laboratory and provided as a supplement to the self-assessment. The Laboratory provides its self-assessment to UC on October 1, 2003. On November 1, 2003, the Contractor (UC) provided the self-assessment and proposed rating of LBNL to DOE OAK.

The Contractor and DOE agreed to use the following table for adjectival graded and numeric scoring:

### DOE-UC Rating Adjectives

Numerical Range	Adjectival Description	Definition
100-90	Outstanding	Significantly exceeds the standard of performance; achieves noteworthy results; accomplishes very difficult tasks in a timely manner.
89-80	Excellent	Exceeds the standard of performance; although there may be room for improvement in some elements, better performance in all other elements offset this.
79 - 70	Good	Meets the standard of performance; assigned tasks are carried out in an acceptable manner - timely, efficiently, and economically. Deficiencies do not substantively affect performance.
69- 60	Marginal	Below the standard of performance; deficiencies are such that management attention and corrective action are required.
< 60	Unsatisfactory	Significantly below the standard of performance; deficiencies are serious, and may affect overall results, immediate senior management attention, and prompt corrective action is required.

### 3. Methodology for Validation of Numerical Scoring for Contractor Self-Assessment - Science & Technology (S&T) FY 2003

#### a. Introduction

The programmatic assessment of the Contractor is based upon the use of peer review and self-assessment in the appraisal and evaluation of S&T/Programmatic Performance; and validated by DOE HQ and BSO program managers. Using the programmatic assessment, the ratings for the science and technology are decided using the rating table below. To convert the adjectival rating to an equivalent numerical (percentage) score, the methodology outlined below is utilized.

#### b. Methodology

For each programmatic assessment and defined by the Parties appraisal area for FY 2003, a specific number is applied, as follows:

**Scoring Crosswalk Table**

Adjectival Rating	Range	Score
Outstanding	100-90 %	95
Excellent	80-89 %	85
Good	70-79 %	75
Marginal	60-69 %	65
Unsatisfactory	59 ↓ %	55

#### Example

Science and Technology	Adjectival Rating	Numeric Score	Weight	Weighted Score
<b>Biology and Biotechnology</b>	<b>Outstanding</b>	<b>91.67</b>	<b>0.03</b>	<b>2.75</b>
Criteria 1	Excellent	85		
Criteria 2	Outstanding	95		
Criteria 3	N/A			
Criteria 4	Outstanding	95		

$(85 + 95 + 95 = 275/3=91.67=\text{Outstanding})$

The scoring range table is used because averaging yields results other than 95, 85, 75, 65, or 55.

The overall score for the Science and Technology/Programmatic performance assessment is calculated by totaling the scores from each Research and Development (R&D) Division. All Divisions are weighted in proportion to their relative funding in the calculation of the overall Science and Technology score. Similarly, DOE S&T program evaluations are funding weighted in the overall S&T evaluation. DOE weights all applicable criteria equally within each LBNL program.

The weighted scores in the programmatic appraisal areas are totaled and the resulting percentage is assigned an adjectival rating based on the scoring range in the Scoring Crosswalk Table. Thus, for FY 2003, S&T's weighted score is 89.5 percent, which equates to an **excellent** adjectival rating. 89.5 percent of 500 equals 447.6 points for FY 2003 when rounded. (See Scoring Table A-FY 2003 Science & Technology Scores.)

#### 4. Appraisal Component Methodology

The DOE OAK Functional Teams validate the Contractor's self-assessment on quality, accuracy, and credibility, and consider other sources of information, reviews, or tests. From this process the teams recommend a numeric and adjectival rating of the Contractor's performance.

- (i) For Science & Technology the methodology is the same with a heavy reliance on assessment from DOE HQ program offices.

- (ii) Laboratory Management, Operations and Administration Functional Areas

The Parties agree that the operational areas of "Environment, Safety and Health (100 points,) and Laboratory Management (100 points) are weighted higher than the other functional areas. All other operations and administration functional areas are equal at 50 points.

- (iii) Performance Objectives

The Parties establish the weights to be assigned at the performance objective and criteria level within the functional teams.

- (iv) Performance Objectives Not Accomplishable During the Rating Period

The methodology used by DOE OAK is to assess these performance objectives where there is enough information available to render an assessment of Contractor performance. In cases where a performance assessment can not be made, it is decided not to rate the performance objective. In such cases the performance objective's weight is maintained, if feasible, by reassigning the performance criteria weights within that performance objective. If that is not possible the weight of the objective is added proportionately to other performance objectives in the functional area.

- (v) Sources of Information

The initial source of information about performance was obtained from the Contractor self-assessment and evaluation. Sources of information used by DOE to validate the credibility and conclusions of the self-assessment and the review of the self-assessment included, but were not limited to:

- Functional appraisals conducted by line and functional managers with input from Headquarters, as appropriate.
- Assessment Management Plans for Operational oversight of the Contractor that include in their scope Appendix F performance objectives.
- Daily operational awareness activities, including interactions, walk-throughs, management meetings or other modes of formal and informal contact with the Contractor.
- External and internal audits and evaluations, such as GAO/OIG reviews, ES&H assessments, Inspections and Evaluations, etc.
- Review and validation efforts of Appendix F measures during the two-week performance assessment review of the Contractor.

(vi) Factual Accuracy Check

A draft of the performance narrative of this report was provided to UC on December 16, 2003, to check the factual accuracy of its contents. The University returned its comments by December 20, 2003.

## 5. Laboratory Management, Operations and Administration Scoring – Tables B and C

Column 1: **POSSIBLE POINTS** - represents the total points allocated for the entire functional area. For example, the functional area of Laboratory Management is allocated 100 points and 400 points is the total for all of the operations/administration section. This is the first tier for the weightings of each functional area; all other weightings within a functional area are sub-ordinate to this overall weight [or points available.]

All functional areas are not equal to each other; they are weighted using a hierarchical method. For example, in FY 2003, Project/Facilities/Construction Management is allocated 50 points, with the exception of Environment, Safety and Health, which is allocated 100 points, all other areas are allocated 50 points.

While Column 1 (possible points) represents the total points available for that functional area, the total points available are further broken down [or allocated] by performance objective(s), and within each objective, by criteria and the actual performance measure(s).

Column 2: **SCORE** - represents the total points awarded to the contractor, through the DOE evaluation process, for each functional area for the fiscal year. For example, if a functional area has 50 points available, the DOE evaluation would result in a numeric score of 50 or less. Thus, it represents the final scoring for the functional area. The summation of Column 2 from each functional area results in the overall score for Operations/Administration functional areas.

Column 3: **PERCENT** - represents the numeric score, expressed as a percentage of total points available. In the above example of a functional area with 50 points, if the functional area received 36 points, this would equate to 72 percent.

## 6. Unique Methodology for Property Management Scores

DOE OAK has used specific, unique methodology only applicable to the property management performance area in calculating the overall score, percent and adjectival rating for the FY 2003 performance. The Parties agree upon the use of a rating table designed to identify a range of **(PPAM)** points earned and the translation of such points to a numeric scoring for the purposes of the Appendix F performance rating for FY 2003. (See Property Scoring Table C).

**FY 2003 Appendix F  
Property Scoring Table**

PPAM Points Earned	Translation to Appendix F Contractual Scoring	Adjectival Rating
493-500	98	Outstanding
484-492	95	
475-483	92	
469-474	88	Excellent
460-468	85	
450-459	82	
433-449	78	Good
417-432	75	
400-416	72	
384-399	68	Marginal
368-383	65	
352-367	62	
336-351	58	Unsatisfactory
320-335	55	
304-319	52	

Using the PPAM model, Property Management could earn from 0 up to 500 points in their performance. If the Contractor earns 480 points (performance in the range of 475 - 483) falls into the category of 92 percent for an outstanding adjectival rating. (Even though mathematically, the total scores for each element adds up to 43.1 out of a possible 45 points or 95.9 percent).

## 7. Methodology for Financial Management Scores

In this Model, points are used to determine the score for each activity. Weights and corresponding points are shown in the contract Appendix F, Section C, Objectives, Criteria, and Performance Measure Levels. The final rating will be based on the total activity points earned. The rating percentage will be calculated as a ratio of total points earned to total points possible (where a total weight of 100 percent is equal to 1,000 points.)

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**Table A – Science and Technology Scores  
Lawrence Berkeley National Laboratory**

SCIENCE AND TECHNOLOGY		ADJECTIVAL RATING	FUNDING (\$M)	WEIGHT	NUMERIC SCORE	WEIGHTED SCORE
<b>BASIC ENERGY SCIENCES</b>		<b>OUTSTANDING</b>	<b>90.1</b>	<b>28.2%</b>	<b>92.0</b>	<b>25.95</b>
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions	Outstanding				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	Outstanding				
Criteria 4	Programmatic Performance and Planning	Excellent				
<b>HIGH ENERGY PHYSICS</b>		<b>OUTSTANDING</b>	<b>39.3</b>	<b>12.3%</b>	<b>90.6</b>	<b>11.15</b>
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions	Outstanding				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	N/A				
Criteria 4	Programmatic Performance and Planning	Excellent				
<b>NUCLEAR PHYSICS</b>		<b>OUTSTANDING</b>	<b>20.0</b>	<b>6.3%</b>	<b>91.8</b>	<b>5.75</b>
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions	Outstanding				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	Outstanding				
Criteria 4	Programmatic Performance and Planning	Excellent				

**Table A – Science and Technology Scores  
Lawrence Berkeley National Laboratory**

SCIENCE AND TECHNOLOGY		ADJECTIVAL RATING	FUNDING (\$M)	WEIGHT	NUMERIC SCORE	WEIGHTED SCORE
<b>COMPUTING SCIENCES</b>						
		<b>GOOD</b>	<b>55.4</b>	<b>17.3%</b>	<b>78.8</b>	<b>13.67</b>
Criteria 1	Quality of Science	Excellent				
Criteria 2	Relevance to National Needs and Agency Missions	Excellent				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	Good				
Criteria 4	Programmatic Performance and Planning	Marginal				
<b>FUSION ENERGY SCIENCES</b>						
		<b>OUTSTANDING</b>	<b>6.1</b>	<b>1.9%</b>	<b>98.0</b>	<b>1.87</b>
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions	Outstanding				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	Outstanding				
Criteria 4	Programmatic Performance and Planning	Outstanding				
<b>BIOLOGICAL AND ENVIRONMENTAL RESEARCH</b>						
		<b>OUTSTANDING</b>	<b>67.9</b>	<b>21.3%</b>	<b>95.2</b>	<b>20.24</b>
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions	Outstanding				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	N/A				
Criteria 4	Programmatic Performance and Planning	Outstanding				

**Table A – Science and Technology Scores  
Lawrence Berkeley National Laboratory**

SCIENCE AND TECHNOLOGY		ADJECTIVAL RATING	FUNDING (\$M)	WEIGHT	NUMERIC SCORE	WEIGHTED SCORE
<b>ENERGY EFFICIENCY &amp; RENEWABLE ENERGY</b>		<b>EXCELLENT</b>	<b>24.0</b>	<b>7.5%</b>	<b>85.0</b>	<b>6.39</b>
Criteria 1	Quality of Science	Excellent				
Criteria 2	Relevance to National Needs and Agency Missions	Excellent				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	N/A				
Criteria 4	Programmatic Performance and Planning	Excellent				
<b>CIVILIAN RADIOACTIVE WASTE MANAGEMENT</b>		<b>EXCELLENT</b>	<b>11.2</b>	<b>3.5%</b>	<b>88.0</b>	<b>3.09</b>
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions	Outstanding				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	N/A				
Criteria 4	Programmatic Performance and Planning	Excellent				
<b>FOSSIL ENERGY</b>		<b>OUTSTANDING</b>	<b>5.4</b>	<b>1.7%</b>	<b>90.0</b>	<b>1.52</b>
Criteria 1	Quality of Science	Outstanding				
Criteria 2	Relevance to National Needs and Agency Missions	Excellent				
Criteria 3	Performance in the Technical Development and Operation of Major Research Facilities	N/A				
Criteria 4	Programmatic Performance and Planning	Outstanding				
		<b>319.4</b>				
<b>ADJECTIVAL RATING</b>		<b>OUTSTANDING</b>				
<b>PERCENTAGE SCORE</b>		<b>89.6</b>				
<b>APPENDIX F S&amp;T POINT SCORE</b>		<b>448.1</b>				

\* Overall rating and score reflects aggregated average of individual criteria scores, some at the low-end of their respective ranges, yielding the overall result shown.

**Table B – Laboratory Management**

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES				Column 1	Column 2	Column 3
				Possible Points	SCORE	PERCENT
<b>LABORATORY MANAGEMENT</b>				<b>100.0</b>	<b>71.00*</b>	<b>71.0%*</b>
<b>PERFORMANCE OBJECTIVE #1. Laboratory Leadership</b>				<b>100.0</b>	<b>71.00*</b>	<b>71.0%*</b>
<b>1.1</b>	<b>Institutional Stewardship and Viability</b>		<b>(Weight = 100%)</b>	<b>100.0</b>	<b>71.00*</b>	<b>71.0%*</b>
1.1.a	Strategic Planning		Weight 20%	20.0	19.00	95.0%
1.1.b	Effective Resource Management and Stewardship of Assets		Weight 20%	20.0	17.00	85.0%
1.1.c	Research Support from Othre Sponsors		Weight 20%	20.0	18.40	92.0%
1.1.d	Community Relations and Science Education		Weight 20%	20.0	19.00	95.0%
1.1.e	Diversity Leadership and Awareness		Weight 20%	20.0	17.60	88.0%
* reflects a 20% / 2 adjectival level reduction due to several institutional issues that surfaced in FY2003						

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES						
			Column1	Column2	Column3	
			Possible Points	SCORE		PERCENT
ENVIRONMENT, SAFETY & HEALTH			100.0	89.8		89.8%
PERFORMANCE OBJECTIVE #1. Do Work Safely			(Weight = 100%)	89.83		89.8%
1.1	Best Practices and Certified/Independently					
	Validated ES&H Management Systems		(Weight = 10%)	10.0	9.50	95.0%
1.1.a	Best Practices and Certified/Independently Validated ES&H Management Systems		(Weight = 10%)	10.0	9.50	95.0%
1.2	ISM System Process Measures		(Weight = 45%)	45.0	40.39	89.8%
1.2.a	Work Planning		(Weight =11.25)	11.25	10.35	92.0%
1.2.b	Identify and Control Hazards		(Weight =11.25)	11.25	10.13	90.0%
1.2.c	Perform Work		(Weight =11.25)	11.25	10.35	92.0%
1.2.d	Feedback and Improvement		(Weight =11.25)	11.25	9.56	85.0%
1.3	ISM System Outcome Measures		(Weight = 45%)	45.0	39.94	88.8%
1.3.a	Routine Exposures from Routine Activities		(Weight =11.25)	11.25	10.69	95.0%
1.3.b	Prevention of Unplanned Radiation Exposures		(Weight =11.25)	11.25	10.91	97.0%
1.3.c	Control of Radioactive Materials		(Weight =11.25)	11.25	10.46	93.0%
1.3.d	Accident Prevention		(Weight =11.25)	11.25	7.88	70.0%

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES		Column1	Column2	Column3
		Possible Score	SCORE	PERCENT
<b>FINANCIAL MANAGEMENT</b>		<b>50.00</b>	<b>32.37*</b>	<b>64.7%*</b>
<b>Performance Objective: #1.0</b>	<b>Effective Accounting Practices</b>	<b>(Weight = 14.1%)</b>	<b>7.05</b>	<b>91.4%</b>
<b>1.1</b>	<b>Cash Management</b>	<b>(Weight = 2.5%)</b>	<b>1.25</b>	<b>94.4%</b>
1.1.a	Effectiveness of Disbursements	<b>(Weight = 1.2%)</b>	0.60	93.8%
1.1.b	Effectiveness of Collections	<b>(Weight = 1.3%)</b>	0.65	95.0%
<b>1.2</b>	<b>Account Management</b>	<b>(Weight = 11.6%)</b>	<b>5.80</b>	<b>90.7%</b>
1.2.a	Work For Others (WFO) Accounts - Use of UC Bridge Funding	<b>(Weight = 2.8%)</b>	1.40	91.0%
1.2.b	High Risk Account Reconciliations	<b>(Weight = 6.4%)</b>	3.20	89.0%
1.2.c	Asset Management	<b>(Weight = 2.4%)</b>	1.20	95.0%
<b>PERFORMANCE OBJECTIVE #2. Financial Stewardship</b>		<b>(Weight = 34.4%)</b>	<b>17.20</b>	<b>81.1%</b>
<b>2.1</b>	<b>Financial Compliance</b>	<b>(Weight = 17.6%)</b>	<b>8.80</b>	<b>74.2%</b>
2.1.a	Audit Results and Resolution	<b>(Weight = 1.8%)</b>	0.90	79.0%
2.1.b	Internal Controls and Compliance on Subject Areas	<b>(Weight = 3.6%)</b>	1.80	79.0%
2.1.c	Cost Accounting Practices	<b>(Weight = 7.2%)</b>	3.60	70.0%
2.1.d	Accuracy of DOE Financial Statements	<b>(Weight = 5%)</b>	2.50	75.0%

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES		Column1	Column2	Column3
		Possible Score	SCORE	PERCENT
<b>FINANCIAL MANAGEMENT</b>		<b>50.00</b>	<b>32.37*</b>	<b>64.7%*</b>
<b>2.2 Financial Reporting</b>	(Weight = 10.8%)	<b>5.40</b>	<b>4.57</b>	<b>84.6%</b>
2.2.a Internal Financial Management Reporting	Weight = 3.8%)	1.90	1.81	95.0%
2.2.b DOE and Other External Laboratory Reporting	(Weight = 7%)	3.50	2.77	79.0%
<b>2.3 Standards and Principles</b>	(Weight = 6%)	<b>3.00</b>	<b>2.85</b>	<b>95.0%</b>
2.3.a Financial Controls	(Weight = 3%)	1.50	1.50	100.0%
2.3.b Financial Policies and Procedures	(Weight = 3%)	1.50	1.35	90.0%
<b>PERFORMANCE OBJECTIVE #3. External Budget Products and Services</b>		<b>10.75</b>	<b>9.76</b>	<b>90.8%</b>
<b>3.1 Budget Formulation and Validation</b>	(Weight = 5%)	<b>2.50</b>	<b>2.38</b>	<b>95.0%</b>
3.1.a DOE Budget Submission and Validation	(Weight = 5%)	2.50	2.38	95.0%
<b>3.2 Budget Execution and Cost Management</b>	(Weight = 16.5%)	<b>8.25</b>	<b>7.39</b>	<b>89.5%</b>
3.2.a Control of Funds	(Weight = 9%)	4.50	3.83	85.0%
3.2.b Reports, Submissions, and Requests	(Weight=7.5)	3.75	3.56	95.0%
<b>PERFORMANCE OBJECTIVE #4. Effective Decision Support</b>		<b>9.50</b>	<b>8.25</b>	<b>86.8%</b>
<b>4.1 Internal Planning, Reporting, and Analysis</b>	(Weight = 19%)	<b>9.50</b>	<b>8.25</b>	<b>86.8%</b>
4.1.a Effective Processes and Tools	(Weight = 14.5%)	7.25	6.67	92.0%
4.1.b Institutional Distributed/Indirect Budget and Rate Management	(Weight = 4.5%)	2.25	1.58	70.0%

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES				Column1 Possible Score	Column2 SCORE	Column3 PERCENT
<b>FINANCIAL MANAGEMENT</b>				<b>50.00</b>	<b>32.37*</b>	<b>64.7%*</b>
<b>PERFORMANCE OBJECTIVE #5. Effective Financial Management Systems</b>				<b>5.50</b>	<b>3.98</b>	<b>72.3%</b>
<b>5.1</b>	<b>Effective Internal Systems</b>		(Weight = 6%)	<b>3.00</b>	<b>2.25</b>	<b>75.0%</b>
5.1.a	Evolving to Meet Technology Advances		(Weight = 6%)	3.00	2.25	75.0%
<b>5.2</b>	<b>Support for DOE Initiatives</b>		(Weight = 5%)	<b>2.50</b>	<b>1.73</b>	<b>69.0%</b>
5.2.a	Effectiveness of Support of DOE Initiatives		(Weight = 5%)	2.50	1.73	69.0%

\* reflects a 20% / 2 adjectival level reduction due to several institutional issues that surfaced in FY2003

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES		Column1	Column2	Column3
		Possible Points	SCORE	PERCENT
HUMAN RESOURCES		50.0	47.5	95.0%
Performance Objective: #1.0		Effectiveness of HR Operations	(Weight = 100%)	50.0
1.1	Certified Human Resource Management Systems	(Weight = 100%)		50.0
1.1.a	Certified Human Resource Management System	(Weight = 100%)		50.0
			47.5	95.0%

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES				Column1	Column2	Column3
				Possible Points	SCORE	PERCENT
INFORMATION TECHNOLOGY INFRASTRUCTURE MANAGEMENT				50.0	47.8	95.5%
PERFORMANCE OBJECTIVE #1. Information Management Program				(Weight = 100%)	50.0	95.5%
1.1	Customer Satisfaction		(Weight = 50%)	25.0	24.3	97.0%
1.1.a	Level of Customer Service			25.0	24.3	97.0%
1.2	Protected Computing Environment		(Weight = 50%)	25.0	23.5	94.0%
1.2.a	Cyber Security Measures			25.0	23.5	94.0%

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES					Column1 Possible Points	Column2 SCORE	Column3 PERCENT
PROCUREMENT					50.0	42.5	85.0%
PERFORMANCE OBJECTIVE #1. Procurement Excellence					50.0	42.5	85.0%
1.1	Assessing Degree of Excellence Achieved	(Weight 100%)			50.0	42.5	85.0%
1.1.a	Measuring System and Service Levels				50.0	42.5	85.0%

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES				Column1 Possible Points	Column2 SCORE	Column3 PERCENT
<b>PROJECT/FACILITIES &amp; CONSTRUCTION MANAGEMENT</b>				<b>50.0</b>	<b>47.5</b>	<b>94.9%</b>
<b>PERFORMANCE OBJECTIVE #1. Real Property Management</b>				<b>2.5</b>	<b>2.4</b>	<b>96.0%</b>
1.1	Real Property Management	(Weight = 5%)		2.5	2.4	96.0%
1.1.a	Program Implementation			2.5	2.4	96.0%
<b>PERFORMANCE OBJECTIVE #2. Physical Assets Planning</b>				<b>7.0</b>	<b>6.6</b>	<b>94.0%</b>
2.1	Comprehensive Integrated Planning Process	(Weight = 14%)		7.0	6.6	94.0%
2.1.a	Effectiveness of Planning Process			7.0	6.6	94.0%
<b>PERFORMANCE OBJECTIVE #3. Project Management</b>				<b>16.5</b>	<b>15.7</b>	<b>95.0%</b>
3.1	Construction Project Performance	(Weight =33%)		16.5	15.7	95.0%
3.1.a	Work Performed			16.5	15.7	95.0%
<b>PERFORMANCE OBJECTIVE #4. Maintenance</b>				<b>16.5</b>	<b>15.7</b>	<b>95.0%</b>
4.1	Facility Management	(Weight = 33%)		16.5	15.7	95.0%
4.1.a	Program Implementation			16.5	15.7	95.0%

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES				Column1	Column2	Column3
				Possible Points	SCORE	PERCENT
PROJECT/FACILITIES & CONSTRUCTION MANAGEMENT				(Weight=100%)	50.0	47.5
						94.9%
PERFORMANCE OBJECTIVE #5. Utilities/Energy Conservation				(Weight = 15%)	7.5	7.1
						95.0%
5.1	Energy Management		(Weight = 15%)	7.5	7.1	95.0%
5.1.a	Energy Goals			7.5	7.1	95.0%

Table C – Operations and Administration System Scores

PERFORMANCE OBJECTIVES, CRITERIA AND MEASURES				Column1 Possible Points	Column2 SCORE	Column3 PERCENT
PROPERTY MANAGEMENT				50.0	43.0	86.0%
PERFORMANCE OBJECTIVE #1. Personal Property Excellence				50.0	43.0	86.0%
1.1	Assessing Degree of Excellence Achieved		(Weight 100%)	50.0	43.0	86.0%
1.1.a	Measuring System and Service Levels		(Weight 90%)	45.0	38.7	86.0%
1.1.b	Introducing Best Business Practices to Improve Property Performance		(Weight 10%)	5.0	4.3	86.0%

**Table D – Total Performance Appraisal Score Summary**  
**Lawrence Berkeley National Laboratory**

FUNCTIONAL AREA	POSSIBLE	SCORE	PERCENT	ADJECTIVE
LABORATORY MANAGEMENT	100	71.0	71.0%	Good
ENVIRONMENT, SAFETY & HEALTH MANAGEMENT	100	89.8	89.8%	Excellent
FINANCIAL MANAGEMENT	50	32.4	64.7%	Marginal
HUMAN RESOURCES	50	47.5	95.0%	Outstanding
INFORMATION TECHNOLOGY INFRASTRUCTURE	50	47.8	95.5%	Outstanding
PROCUREMENT	50	42.5	85.0%	Excellent
PROJECT/FACILITIES AND CONSTRUCTION MANAGEMENT	50	47.5	94.9%	Outstanding
PROPERTY MANAGEMENT	50	43.0	86.0%	Excellent
SCIENCE & TECHNOLOGY SUBTOTAL	500	448.1	89.6%	Excellent
LABORATORY MANAGEMENT SUBTOTAL	100	71.0	71.0%	Good
OPERATIONS & ADMINISTRATION SUBTOTAL	400	350.4	87.6%	Excellent
<b>LBNL TOTAL</b>	<b>1,000</b>	<b>869.5</b>	<b>87.0%</b>	<b>Excellent</b>